# Pediatrics Supplement

Contributed by

# The American College of Osteopathic Pediatricians

Volume 3 May, 1950
Number 1 Pages 1 to 32

# PEDIATRICS SUPPLEMENT

## American College of Osteopathic Pediatricians

CONTENTS

EDITORIAL

Our Third Supplement. Arnold Melnick, M.A., D.O., Philadelphia ..... 2

ARTICLES

The Study of Normal Temperature of School Children Aged Two to Five Years. Harold S. Goldberg, A.B., D.O., New York ..... 3

Differential Diagnosis of Heart Lesions. Roger Abbott Peters, D.O., Oakland, Calif. ..... 5

Cyanotic Heart Lesions. William S. Spaeth, D.O., Drexel Hill, Pa. ..... 6

Murmurs in Congenital Heart Diseases. F. Munro Purse, D.O., Philadelphia ..... 9

Nonsurgical Treatment of Congenital Heart Disease. Robert R. Tonkens, Kansas City, Mo. ..... 11

Roentgen Findings in Congenital Malformations of the Heart. James N. Fox, D.O., Dayton, Ohio ..... 14

First the Infant—An Entity. Beryl E. Arbuckle, D.O., Philadelphia ..... 16

Diagnosis of Allergy and Desensitization. Harold L. Bruner, D.O., Philadelphia ..... 19

Gastrointestinal Allergies in Pediatrics. Nelson D. King, D.O., Boston ..... 21

Respiratory Allergies. Leo C. Wagner, D.O., M. Sc., Philadelphia ..... 22

Allergic Skin Lesions in Pediatrics. Walter L. Willis, D.O., Conshohocken, Pa. ..... 25

Psychologic Problem of the Allergic Child. Cecil Harris, D.O., Philadelphia ..... 28

Mumps and Its Complications: Advances in Diagnosis and Treatment. Leopold Salkind, D.O., Philadelphia ..... 29

Gamma Globulin in Acute Infectious Diseases. Sherwood Berman, A.B., D.O., Philadelphia ..... 31

ARNOLD MELNICK, Philadelphia ..... Editor

Editorial Office, 212 East Ohio St., Chicago 11.
Address all communications to the Chicago Office.
Copyright, 1950, by the American Osteopathic Assn.

OFFICERS

PRESIDENT ..... F. Munro Purse, Philadelphia
FIRST VICE PRESIDENT ..... George W. Shaw, Alhambra, Calif.
SECOND VICE PRESIDENT ..... Mary E. Golden, Des Moines, Iowa
SECRETARY-TREASURER ..... Thomas F. Santucci, Philadelphia

Volume 3 May, 1950 Number 1

## OUR THIRD SUPPLEMENT

This is the third Pediatrics Supplement.

With it one hope, which was expressed editorially here a year ago, has reached fulfillment, for we are again able to present a series of papers led by an original research article. A thoroughgoing investigation into the average temperatures of children from 2 to 5 years of age was undertaken by Harold S. Goldberg of New York City and his statistical analyses and conclusions are presented as the lead article in this Supplement.

The remaining material has come from several sources. We have included a number of the papers on congenital heart disease which were presented at the Pediatrics Teaching Sessions of the 1949 Convention of the American Osteopathic Association. Also being published are articles from an allergy symposium conducted by Region I, American College of Osteopathic Pediatricians, and two papers from a panel on acute infectious diseases held by the Region I group.

The editor was privileged to read much excellent material on pediatrics before finally choosing the papers that appear here. Making such a selection added hours to the task, but lightened the spirit of it. Each article submitted makes the job of editing more enjoyable.

Original research—papers from a wider area of sources—a greater number of papers submitted for consideration—these were the shining aspects of this 1950 Supplement. It is sincerely hoped that they will again characterize next year's production so that the American College of Osteopathic Pediatricians may be privileged to bring to THE JOURNAL the very best of pediatric material.

ARNOLD MELNICK, M.A., D.O.

# The Study of the Normal Temperature of School Children Aged Two to Five Years

HAROLD S. GOLDBERG, A.B., D.O.
New York

There is still much controversy about the range of temperature in young children. Most physicians agree that the average oral temperature for healthy children is 98.6 F. It is also generally accepted that the rectal temperature is 1.0 F. higher than the oral temperature.[1] It is important to obtain information on the limits of normal temperatures to help the pediatrician manage his patients. A better understanding of temperatures may permit a child with rheumatic fever to become ambulatory earlier, it may result in earlier hospital discharges of children recovering from illness, and it may help in the diagnosis of disease.

In an attempt to reduce the absence rate of nursery school children and to prevent the spread of infectious diseases,[2] an investigation of the literature was made for information on the range of temperatures in healthy children. Because of the paucity of such information, a study was made to determine the average rectal temperature of asymptomatic nursery school children from 2 to 5 years of age.

## METHOD

All temperatures were taken under standard conditions. The children were brought to the nursery between 8:00 and 9:00 a.m., and put to rest upon cots at 9:00 a.m. Rectal thermometers (Becton-Dickinson) with calibrations of 0.2 F. were used. The thermometers were inserted into the rectums for a minimum of 3 minutes. All temperatures were read by the school nurse who followed a standardized procedure so that uniform results would be obtained. All of the temperatures were recorded in degrees Fahrenheit and all references to temperatures in this report are to be so interpreted.

All children with temperatures which exceeded 100.0 F. were observed for clinical manifestations of illness and their temperatures were rechecked at 4-hour intervals. If no signs or symptoms of illness appeared or if the temperature did not rise, the reading was considered normal and recorded as such. All records of temperature deviations which were accompanied by clinical evidence of illness were discarded, as were the records of the preceding day. The data were collected during the months of August to April inclusive. All the children in this study came from approximately the same socio-economic level and attended the same nursery school.

## RESULTS

The results of this study will be presented in the following manner:

A. The range of rectal temperature of nursery school children free from any clinical manifestations of illness

B. The temperature differences between boys and girls from 2 to 5 years old

C. The variations of temperature during the months of the year.

There were a total of forty-seven subjects in this study and they were grouped according to age. The age and sex distribution of the children and the number in each group are shown in Table I.

**Table I – Age and Sex Distribution**

| Age | Males | Females | Total |
|---|---|---|---|
| 2 | 4 | 2 | 6 |
| 2½ | 2 | 3 | 5 |
| 3 | 8 | 4 | 12 |
| 4 | 6 | 3 | 9 |
| 5 | 11 | 4 | 15 |

## AGE VARIATION

The data in Table II disclose an intragroup variation, i.e., the average temperatures of the individuals in these groups vary from each other as noted by the Range of Individual Deviations for each age group. There is also a temperature variation between age groups. The highest temperature is recorded in the 2-year old group and there is a gradual decrease with increasing age. The decrease is, however, clinically insignificant. It will be noted by the range of individual deviations that the daily temperature is variable. The maximum deviation found in this group is ±0.38. It can therefore be concluded that the average rectal temperature range is 99.7±0.38 F.

**Table II – Average Temperatures and Range of Deviations**

| Age | Number of Readings | Average Temperature | Range of Individual Deviations |
|---|---|---|---|
| 2 | 645 | 99.72 | ±0.18 – 0.26 |
| 2½ | 589 | 99.71 | ±0.19 – 0.24 |
| 3 | 1398 | 99.71 | ±0.16 – 0.38 |
| 4 | 1037 | 99.69 | ±0.17 – 0.34 |
| 5 | 1244 | 99.68 | ±0.16 – 0.35 |

## RANGE OF VARIATION

Another type of analysis to demonstrate the considerable variation in the temperature range of symptom-free children is shown in Table III, where a frequency distribution is given for the 2-year old group. This distribution is also characteristic of the other age groups in this series.

| Table III - Frequency Distribution of Temperature for Two-Year Olds | | |
|---|---|---|
| Temperature | Number of Readings | Percentage of Totals |
| 99.4 | 50 | 8 |
| 99.6 | 343 | 53 |
| 99.8 | 96 | 15 |
| 100 | 122 | 19 |
| 100.2 | 24 | 3.5 |
| 100.4 | 10 | 1.5 |

These data again indicate that considerable variation in temperature may be found in symptom-free children. Thus it is noted that 19 per cent of the readings in this group were of 100.0 F. and the individuals on whom they were made were not only free of symptoms at the time of the reading but did not develop any. However, only 5 per cent of asymptomatic children had temperatures beyond 100.0 F., and none had temperatures beyond 100.4 F.

| Table IV - Variations According to Sex | | |
|---|---|---|
| Sex | Number | Average Temperature |
| Male | 31 | 99.69 |
| Female | 16 | 99.71 |

### SEX VARIATION

It is apparent from the data in Table IV that the temperature differs slightly in relation to sex. This difference, however, is only 0.02 F. and is clinically insignificant.

### MONTHLY VARIATIONS

The mean temperatures reported in terms of months are given in Table V. It can be concluded, from consideration of both the average temperature and the standard deviations that there exist only slight and insignificant differences. The largest difference occurs between the means of August and January, but this is only 0.14 F. and is, therefore, clinically unimportant.

### CONCLUSIONS AND SUMMARY

Forty-seven nursery school children were studied by taking daily rectal temperatures under standard conditions. All readings which were accompanied by or followed, within 48 hours, by clinical signs and/or symptoms of illness were eliminated. There were 4,913 individual readings taken on these subjects from August through April inclusive.

The following conclusions can be drawn from this investigation:

1. The average rectal temperature of clinically asymptomatic children 2 to 5 years old was found to be 99.7±0.38 F. There is considerable variability in temperatures but less than 1 per cent exceeded the range of 99.4 to 100.4 F.
2. As the age increased a slight decrease in temperature was noted. This difference is, however, clinically insignificant.
3. The slight temperature differences found between boys and girls is also clinically insignificant.
4. No significant relationship was found to exist between the various months of the year and the rectal temperature of the subjects.

245 W. 25th St.

### REFERENCES

1. Stadler, H.: Variations between oral and rectal temperature readings. J. Iowa Soc. 32:70-71, Feb. 1942.
2. Goldberg, H. S.: A nursery health program. For. of Osteopathy 21:333-334, Feb. 1948.

| Table V - Monthly Average Temperatures and Standard Deviations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Aug. | Sept. | Oct. | Nov. | Jan. | Feb. | March | April |
| Number of Readings | 135 | 594 | 695 | 523 | 839 | 715 | 775 | 637 |
| Average Temperature | 99.79 | 99.68 | 99.72 | 99.68 | 99.65 | 99.73 | 99.72 | 99.71 |
| Standard Deviation | 0.32 | 0.25 | 0.21 | 0.22 | 0.25 | 0.21 | 0.19 | 0.25 |

### DANGERS OF X-RAY MACHINES FOR FITTING SHOES

Federal Security Administrator Oscar R. Ewing on March 29 issued a warning to shoe stores, their customers, and their employees that x-ray machines used for fitting shoes may be dangerous. He called for voluntary control by shoe retailers, and urged communities to set up their own controls if such voluntary measures fail.

Mr. Ewing based his warning on the following Public Health Service statement, made in answer to many requests received for guidance and advice on the use of x-ray shoe-fitting devices in retail stores:

"Inquiries coming to the Public Health Service about the use of x-ray devices in retail shoe stores originate in the knowledge that such machines are potentially dangerous and that under conditions known to prevail in many stores the dangers far outweigh any beneficial effects the machines may have in the fitting of shoes.

"Use of x-ray shoe fitting machines is almost certain to be harmful when the machines are so constructed as to allow radiation to leak into the surrounding area, or when the machines are out of adjustment, or when the customer's feet are exposed to radiation a number of times in the course of numerous fittings. Children are more likely to be harmed than adults, since rapidly growing tissue is especially susceptible to damage from radiation. If there is radiation leakage, clerks and others who spend considerable periods of time in the immediate area of the machines are endangered.

"Since the need for examination by x-ray in the fitting of shoes—except, possibly, in cases of malformation—has not been proven, it is the view of the Public Health Service that the use of x-ray shoe fitting machines should be strictly limited by stores which have such equipment or, if necessary, by local regulation. In cases of malformation, it is assumed that professional advice would be sought."

Pediatrics Supplement
Vol. 3, No. 1, May, 1950



# Differential Diagnosis of Heart Lesions*

ROGER ABBOTT PETERS, D.O.
Oakland, Calif.

To make a differential diagnosis of heart lesions it is necessary to understand the normal heart and its embryological development, anatomy, and physiology. Such knowledge on the part of the reader is assumed in presenting this paper. In addition, there should be borne in mind a picture of the possible causes of the lesion. Lesions can be divided into three main groups for classification: (1) congenital, (2) pathological (infectious or organic), and (3) physiological (functional or noninfectious).

Of the three classifications, congenital defects of the heart and great vessels are relatively the rarest, according to White,[1] averaging 2 per cent of the total incidence of organic heart disease after infancy. Of course, this percentage varies in different parts of the country because of the difference in the prevalence of rheumatic heart disease, the most prevalent organic heart disease in children. Rheumatic involvement is evident rarely before the age of six but as the age of fifteen is approached it becomes about eight times as common as at six. Many congenital cardiac lesions are of minor significance except that they may become the center of a grave infection. Congenital heart disease may not be discovered until attention is attracted by athletic activities of early teen age.

Of all the general signs to be found, the one that is most common to the congenital lesion is cyanosis. Its appearance in a slight to a marked degree is most suggestive of a congenital heart lesion in infancy. The next most characteristic and constant sign in the severe cases, that is, in those with well-marked and chronic cyanosis, is clubbing of the fingers and toes. It varies greatly in degree as does cyanosis and is not frequent in very young infants or children; it develops later in cyanosis. Chest deformities, spider-like fingers and toes, and elongations of the entire body may be found in patients with congenital heart disease. Where these signs are found suspicion of cardiovascular defects, especially of auricular septal defects, should be aroused.

On physical examination of the heart, the signs vary according to the type and degree of the congenital lesion. There may be little or no evidence of trouble in the heart, even in some of the cases with serious defects, and there usually is but little enlargement. However, in the pathological heart, the more serious the infection the more evident is the heart lesion. The child's skin is sallow, there are signs of malnutrition, and the patient usually has been given numerous tonics but to no avail. Also there is a history of frequent attacks of unexplainable fever or a persistent low-grade fever similar to that of tuberculosis. There may be a history of frequent sore throats or diseased tonsils, chorea, repeated headaches, nose bleeds, stomach aches, and growing pains or leg aches. These complaints invariably occur following a day of strenuous play or exercise. Such a history definitely classifies the child as rheumatic and warrants vigorous, consistent treatment. Functional lesions are very likely to be present if the child is suffering from an anemia, whatever the cause, but will disappear as the child's condition improves. They need no treatment and disappear about the twelfth year.

In auscultation no abnormalities may be found, even in the presence of a serious congenital defect. There may or may not be murmurs. When murmurs occur they are, as a rule, systolic in time and loudest just to the left of the sternum along the base of the heart from the first and third interspaces or along the sternum. The opposite is the case in pathological heart disease. That murmur is best heard at the apex of the heart at the fourth interspace near the sternum and it is clear and distinct. While not so loud as the congenital murmur, it is louder than the functional, which is a soft almost imperceptible systolic murmur and is heard best along the base of the heart. It is very definitely localized and is not constant nor transmitted as in the case of a pathological murmur. Of course, with the functional murmur there is not the background history of rheumatic disease. Any murmur found in a patient under 2 years of age is provisionally classified in the congenital group.

Blood pressure tends to be low in congenital heart disease. As a means of differentiation the blood pressure has little or no value except in the case of congenital coarctation of the aorta where the blood pressure is higher in the upper than in the lower extremities, sometimes to a marked degree when the coarctation is extreme.

If an examination results in the finding of an unusually small pulse in the arteries of the leg as compared to the large pulse at the wrist; dilated, tortuous cutaneous arteries; or erosion of the ribs on x-ray, the diagnosis of a congenital heart lesion is simplified. Other factors which aid a diagnosis of aortic coarctation are left ventricular hypertrophy in the absence of aortic regurgitation, aortic stenosis, or mitral regurgitation, and high blood pressure. The latter may be mistaken for essential hypertension unless one palpates the femoral artery.

The heart rate and rhythm are generally not abnormal in congenital defects. Very infrequently are there found premature beats or paroxysmal tachycardia whereas the opposite is the case in both pathological and functional disorders of the heart.

Electrocardiograms may be helpful in establishing a diagnosis of congenital heart disease if they do not show arrhythmia, myocarditis, or endocarditis. These are findings more characteristic of the other classifications of heart disease. There is one congenital disturbance, however, where the electrocardiogram is a help in differential diagnosis; it is the one in which there is the greatest degree of abnormal right axis deviation known (dextrocardia). With this deviation there is also found, as a rule, an abnormal increase in amplitude of the P wave.

Very rarely in the case of intraventricular septal defect the electrocardiographic recording will show heart block. Heart block belongs more to the classification of organic lesions. The only changes then that can be expected to show on the electrocardiogram in con-

*Presented at the Pediatrics Teaching Session, Fifty-Third Annual Convention of the American Osteopathic Association, St. Louis, July 13, 1949.

genital cardiac disease are: (1) right ventricular preponderance, (2) large high sharp P wave, (3) large biphasic QRS waves, and rarely (4) conduction defects.

X-ray study of the heart and vessels may be of help in differentiating left heart involvement from right and in revealing abnormalities of the great vessels. Marked enlargement of the whole heart shadow is characteristic of congenital idiopathic hypertrophy. The tetrad of Fallot is a combination of lesions which frequently casts a cardiac shadow and may be diagnosed by x-ray. The hypertrophy of the right ventricle lifts the cardiac apex and sharpens it, giving rise to the wooden shoe deformity.

Albuminuria is common in severe types of congenital heart disease, partly because of engorgement due to polycythemia and less often because of slight to moderate congestion from cardiac insufficiency.

Unless there is cyanosis or infection, the blood cell count and hemoglobin will be normal. With a pathological heart there would naturally be found blood changes in proportion to the severity of the infection. The functional heart condition presents no blood changes. On the other hand, if congenital disease of the heart has been present for sufficient time, there is an increase in red cells and in hemoglobin, that is, polycythemia.

It should be pointed out here that mistakes are made by pediatricians in labeling a murmur as due to a serious heart disease; as many as 50 per cent of their selections may prove to be functional murmurs or arrhythmias. This frequency of functional cardiac disorders should be remembered because overemphasis of the seriousness of cardiac disease may bring personality injury to the individual.

### CONCLUSIONS

Differentiation of congenital and pathologic heart diseases is made by the history of involvement of the heart from birth (if that is reliable), the characteristic signs, certain murmurs, heart shape, cyanosis, clubbing of the fingers, and typical electrocardiograms. Acquired heart disease, especially rheumatic, subacute bacterial, and coronary disease, may be superimposed on congenital cardiovascular defects.

The discovery of congenital anomalies elsewhere in the body favors somewhat the diagnosis of congenital heart defects when the differentiation of the type of heart disease is difficult or obscure. In children cardiac enlargement may be due to congenital defects, but is almost always a result of acute rheumatic myocarditis or chronic rheumatic valvular disease. The differentiation is generally easy in older children because of joint and heart signs and symptoms, but in very young children, in whom the rheumatic infection is ill-defined, the problem may be very difficult.

460 Staten Ave.

### REFERENCE

1. White, P. D.: Heart disease. Ed. 3. The Macmillan Co., New York, 1947.

### ADDITIONAL REFERENCES

Dressler, W.: Clinical cardiology, with special reference to bedside diagnosis. Paul B. Hoeber, Inc., New York, 1942.

Purse, F. M.: Differential diagnosis of heart lesion. J. Am. Osteop. A. 49: 467-469, May 1950.

---

# Cyanotic Heart Lesions*

WILLIAM S. SPAETH, D.O.
Drexel Hill, Pa.

Cyanosis is the clinical manifestation that separates congenital heart disease from other types. Therefore, it is well to consider the cause of cyanosis.

Relatively, a large amount of reduced hemoglobin in the circulating blood is required to produce visible cyanosis; it is estimated that at least 5 grams of reduced hemoglobin per 100 cc. of circulating blood must be present. Normally, the blood has a hemoglobin content of 15 grams per 100 cc. Therefore, one-third of the hemoglobin of the circulating blood must be in the form of reduced hemoglobin to produce visible cyanosis.

This does not mean that there must be 5 grams of reduced hemoglobin per 100 cc. in the arterial blood. The implication is that the arterial blood is so diluted with venous blood that after it gives up the normal oxygen to the tissues, the capillary blood return will contain 5 grams of reduced hemoglobin per 100 cc. of circulating blood. That is, it is necessary for only 3 grams of reduced hemoglobin per 100 cc. of blood to be shunted into the systemic circulation to produce cyanosis.

When cyanosis is due to a congenital lesion or lesions of the heart, it is anatomically due to one of three conditions or a combination of them:

1. A venous-arterial shunt in which venous blood, or unoxygenated blood, is pumped into the left side of the heart or aorta

2. The prevention of venous blood from reaching the lungs to become oxygenated

3. Interference in the return of oxygenated blood to the systemic circulation.

Cyanosis, when due to a congenital heart lesion, is therefore indicative of a severe malformation. In most instances there is a malformation of the great vessels, in which the vessels arise from the ventricles in an abnormal position. These lesions are so formed that only a small amount of blood reaches the lungs and a large volume of venous blood is pumped into the systemic circulation.

There are also other contributing causes of cyanosis that are secondary to the congenital malformation:

1. The rate of utilization of oxygen by the peripheral tissue affects the amount of reduced hemoglobin in the circulating blood. Normally, this is corrected by an increase in the heart rate and the rate of blood flow to the tissue.

2. Abnormally, as in congenital heart lesion, peripheral stasis may play a role in the production of reduced hemoglobin. It has a two-fold effect:

a. The slowing of the rate of flow of the blood permits the tissue to take up more oxygen, thus increasing the amount of reduced hemoglobin.

*Presented at the Pediatrics Teaching Session, Fifty-Third Annual Convention of the American Osteopathic Association, St. Louis, July 13, 1949.

b. In compensatory polycythemia there is engorgement and dilation of the capillaries and an increase in the total number of capillaries. This increase in the capillary bed plus the reduced rate of flow makes the color of the blood more readily detectable, thus lowering the threshold at which cyanosis is apparent.

There are also other factors that may alter the extent of the oxygenation of the blood as it passes through the lungs; some are physiological changes, while others are caused by pulmonary disease.

1. Vital capacity of the patient is important, for when the vital capacity is lowered the exchange of oxygen and carbon dioxide in the lungs is decreased in direct proportion.

2. The acceleration and overactivity of the heart in disease may increase the flow of blood through the lungs to such a degree that the blood no longer has time to be normally aerated.

3. Hemoconcentration is important, as in polycythemia the red blood cells are so concentrated that they can no longer pass through the capillaries in a single file. Thus the approximation with the capillary wall is interfered with and less oxygen is absorbed.

Congenital anomalies in the pulmonary circulation are factors. Basically, there are three main abnormalities: (1) Inadequate circulation to the lungs, (2) difficulty in the return of oxygenated blood to the systemic circulation, and (3) failure of the blood to be fully oxygenated in its passage through the lungs.

1. In inadequate circulation of blood to the lungs, as in pulmonary stenosis and atresia, the greater the degree of obstruction is, the greater the degree of cyanosis. The blood reaching the lungs and being fully oxygenated is still insufficient to prevent cyanosis. This condition can be corrected only by increasing the volume of blood to the lungs by surgical means (Blalock and Taussig's innominate artery operation).[1]

2. The interference with the return of the oxygenated blood to the systemic circulation, as in the complete transposition of the great vessels, is so great that cyanosis occurs. The oxygenated blood is prevented from returning to the systemic circulation in this lesion because the pulmonary artery arises from the left ventricle. Thus the oxygenated blood keeps recirculating through the lungs with only a small amount escaping via the ductus arteriosus into the aorta.

3. Failure of the blood to be oxygenated as it passes through the lungs occurs when there is a severe arteriovenous shunt, causing adequate or excessive circulation of blood to the lungs. There follows a change in the pulmonary vessels or in the alveolar membrane which prevents the blood from becoming properly oxygenated. This condition is more likely to develop when there is a great increase in the volume of blood circulating through the lungs, as in the Eisenmenger complex and, occasionally, in high septal defect lesions.

The Eisenmenger complex is a combination of deformities—the aorta is dextroposed, partly overriding the ventricular septum, and consequently there is a high ventricular septal defect. There is no pulmonary stenosis or right ventricular hypertrophy. In this manner it differs from the tetralogy of Fallot. Cyanosis and clubbing of fingers may or may not be present.

### METHODS FOR DETERMINATION OF CAUSE OF CYANOSIS

1. *X-Ray Evidence.*—The contour of the heart on x-ray is an aid at times in the diagnosis of the type of congenital abnormalities. There are, however, very few roentgenologists or cardiologists with sufficient experience to make a positive diagnosis from heart contour.

a. The absence of the normal pulmonary conus is indicative of a small amount of blood going to the pulmonary circulation and a large venous shunt into the systemic circulation. This is found in pulmonary stenosis and atresia in which the pulmonary artery is congenitally small and does not produce on x-ray the normal size conus. In misplaced pulmonary artery, it is not seen.

b. A fullness of the pulmonary conus seen on x-ray is indicative of a dilated or enlarged pulmonary artery. This is generally due to a congenital lesion that causes a large volume of blood to pass through the pulmonic artery. If cyanosis is present at the same time, the cyanosis is due to some other mechanism, such as a change in the pulmonary vessels or alveolar membrane which interferes with oxygenation of the blood. This is accompanied with visible pulsation of the hilar shadows on fluoroscopic study. The hilar pulsation or so-called "dancing hilus" occurs under two conditions:

(1) When the contraction of the left auricle is reflected backward into the pulmonary veins as in mitral insufficiency, mitral stenosis, or mitral atresia

(2) When with marked dilatation of the pulmonary artery the forward pulsation from the right ventricle becomes visible in the main branches of the pulmonary artery.

Some dilatation of the pulmonary artery occurs in patent ductus arteriosus and tremendous dilatation is found in the Lutembacher syndrome.

Before birth and for a short time after birth the blood flows from the pulmonary artery through the ductus arteriosus to the aorta. Normally, as soon after birth as the pressure in the left side of the heart becomes equal to that in the right side the ductus becomes functionally closed and no blood flows through. In patency the pressure in the aorta exceeds the pressure in the pulmonary artery and the flow of blood is from the aorta to the pulmonary artery thus increasing the volume of the blood in the pulmonary artery and also the pressure into the pulmonary branches and in the lung—hence the hilar pulsation.

The Lutembacher syndrome consists of an auricular septal defect combined with a congenital or an acquired mitral stenosis. Mitral stenosis causes an increase of pressure in the left auricle, increasing the strain on the right side of the heart. Under these conditions the pressure in the left auricle is high and there will be a left to right shunt—left auricle to right auricle, which in turn increases the dilatation of the pulmonic artery.

2. *Circulation Time.*—Determination is made by injecting saccharin into the arm and noting the length of time it takes for a sweet taste to be noted or by using Decholin and noting when a salty taste occurs. The latter substance produces the most accurate results in the child because he will make a face before he will tell you when he tastés salt. The normal circulating time from arm to mouth is 20 seconds. When there is a large venous-arterial shunt, the test material passes into the systemic circulation without passing through the lungs. Thus there is a marked shortening of the circulation time to as low as 5 seconds at times. This occurs in dextroposition of the aorta with a high interventricular septal defect as in the Eisenmenger complex.

### CLINICAL MANIFESTATIONS

Cyanosis occurs in varying degrees and when not severe it may be more readily detected by the deep mulberry color of the mucous membrane of the buccal cavity and the pharyngeal wall than in changes in skin color. Eye ground examination reveals dilatation and congestion of the retinal vessels.

Polycythemia, as a rule, is an attempt on the part of the body to adjust to anoxemia. The red blood cell count will rise to 6 or 8 million per cubic millimeter of blood. The hemoglobin and the hematocrit value (the volume of the packed red blood cells per 100 cc. of blood) are proportionately increased. The hemoglobin rises to as much as 100 to 140 per cent and the hematocrit value to as much as 80 to 90 per cent. The spleen does not become enlarged as in polycythemia vera.

Clubbing of the fingers and toes is never seen at birth and rarely in the first month of life. It takes time for this condition to develop.

The distribution of cyanosis should always be noted. When the pressure in the pulmonary artery is greater than that in the descending aorta and the ductus arteriosus is patent, blood will flow as in fetal circulation from the pulmonary to the aorta. By this mechanism the upper extremities receive pure oxygenated blood, while the lower extremities receive a mixture of venous and oxygenated blood and are, therefore, slightly cyanotic.

In coarctation of the aorta of the infant type with patent ductus arteriosus, the upper extremities receive pure oxygenated blood, but little of this blood passes the constriction of the coarctation to the lower extremities. The pressure in the descending aorta is lowered and venous blood passes from the pulmonic artery via the ductus arteriosus, diluting the oxygenated blood of the aorta; thus the lower extremities are cyanotic.

The reversal of this distribution of cyanosis occurs in complete transposition of the great vessels. The lower extremities are less cyanotic than the upper extremities.

The blood pressure varies in certain congenital anomalies. An example is in coarctation of the aorta of the adult type. The blood pressure is found to be high in the upper extremities combined with a weak or absent pulse in the lower extremities. This variance in blood pressure also exists in the infantile type of coarctation of the aorta with patent ductus arteriosus.

### TETRALOGY OF FALLOT

Many congenital cardiac disorders are incompatible with life, because too large a quantity of unoxygenated blood is being pumped into the systemic circulation. Many of the patients will die before 18 months of age. However, the combination of lesions known as the tetralogy of Fallot is compatible with life when the pulmonic stenosis is not too severe.

The tetralogy of Fallot consists of four lesions: Pulmonary stenosis, dextroposed aorta, interventricular septal defects, and right ventricular hypertrophy.

*Diagnosis.*—At birth due to the low pressure in the pulmonary circulation, blood flows from the aorta through the ductus arteriosus to the lung via the pulmonary artery. Thus the ductus arteriosus is of functional importance and the combined blood flow through the ductus arteriosus and stenosed pulmonic artery is at times sufficient to prevent visible cyanosis until the ductus arteriosus closes anywhere from 1 to 6 months of age. The heart is normal in size and there is a systolic murmur at the base.

After the ductus arteriosus closes, the severity of the cyanosis depends upon the degree of stenosis of pulmonary valve and the extent of the dextroposition of the aorta. The development of cyanosis at the end of the first week or month of life is always distressing to the parents. However, late development of cyanosis is an indication of a less severe stenosis.

After the ductus arteriosus closes the following physical signs are present:

1. Cyanosis is more intense.
2. Size of the heart on percussion is normal.
3. Slight exertion produces dyspnea.
4. Gradually polycythemia develops with elevated erythrocyte count, hemoglobin, and hematocrit reading.
5. Clubbing of the fingers develops gradually and becomes apparent at about 4 to 6 months of age.
6. The blood pressure is difficult to obtain because the pulse is weak and the pulse pressure is narrow.
7. At the end of the first week of life the heart on auscultation presents a systolic murmur which is heard to the left of the sternum at the third interspace. Its intensity varies with the change in pressure between the pulmonic and the systemic circulation. A thrill over the base of the heart usually accompanies the murmur. Neither is of diagnostic importance except to indicate that there is a congenital deformity.
8. Children with inadequate circulation to the lungs are often found squatting as it relieves their circulatory discomfort. They are usually stunted in growth, a common result of anoxemia. They are thin, suffer indigestion, and have a history of having feeding difficulties as well as being slow in gaining weight.

X-ray plates of the heart in infants with tetralogy of Fallot show the heart to be normal in size. As the heart develops it takes on its characteristic contour. There is an absence of fullness of the pulmonary conus. The contour of the upper left border of the heart is concave instead of convex. This is due to a small pulmonary artery and rotation of the aorta.

In the left anterior-oblique position the right ventricle is seen to be enlarged, projecting forward to the anterior chest wall. The pulmonary window is unusually clear. The left ventricle is normal.

Due to the diminished pulmonary circulation, the lung fields are unusually clear. In the older child, an increased network of small vessels of collateral circulation produces an increased density of the hilar shadows. There are, however, never any pulsations visible.

### SUMMARY AND CONCLUSIONS

The presence of cyanosis in varying degrees with established congenital lesions of the heart is a differentiating factor of importance.

Cyanosis indicates excessive blood being pumped into the right side of the heart or aorta, interference with blood to the lungs, or interference with oxygenated blood returning from the lungs.

Cyanosis may also be caused by increased pulmonary circulation, peripheral stasis, hemoconcentration, disturbed rate of oxygen utilization, and failure of oxygenation in the lungs.

Clinical manifestations of cyanotic congenital heart lesions are cyanosis of varying degree, eye ground changes, polycythemia, hemoglobin rise, hematocrit increase, and clubbing of the fingers.

Diagnosis is based on the clinical manifestations, but differential diagnosis may be aided by the use of x-ray, circulation time tests, Diodrast visualization of

the heart and great vessels and catheterization of the heart.

2804 Hillcrest Road

REFERENCE

1. Blalock, A., and Taussig, H. B.: Surgical treatment of malformations of heart in which there is pulmonary stenosis or pulmonary atresia. J. Am. M. A. 128:189-202, May 19, 1945.

ADDITIONAL REFERENCES

Ash, R.: Diagnosis and treatment of congenital cardiovascular anomalies. Clinics 5:18-32, June 1946.

Bing, R. J., Vandam, L. D., and Gray, F. D., Jr.: Physiological studies in congenital heart disease; results obtained in 5 cases of Eisenmenger's complex. Bull. Johns Hopkins Hosp. 80:323-347, June 1947.

Gross, R. E.: Surgical treatment for abnormalities of the heart and great vessels. Charles C Thomas, Springfield, Ill., 1947.

Smolik, E. A., Blattner, R. J., and Heys, F. M.: Brain abscess associated with congenital heart disease. J. Am. M. A. 130:145-147, Jan. 19, 1946.

Sussman, M. L., Grishman, A., and Steinberg, M. F.: Newer concepts in diagnosis of congenital heart disease. Am. J. Dis. Child. 65:922-936, June 1943.

Taussig, H. B.: Congenital malformations of the heart. Commonwealth Fund, New York, 1947.

# Murmurs in Congenital Heart Diseases*

F. MUNRO PURSE, D.O.
Philadelphia

It would seem appropriate to preface any discussion of heart murmurs with the statement that perhaps there is no other phase of physical examination in which the personal factor enters to the extent that it does in the practice of auscultation of the heart. In children, it is the most important single feature. It goes without saying that the examination will be unsatisfactory, or even worthless, if the child is crying. Few have escaped the embarrassment of missing heart murmurs in young babies only to find them so loud at a subsequent examination as to make it impossible to believe that they had developed during the interval between examinations.

It should be an invariable rule to examine each patient in the supine, in the left lateral, and in the sitting positions. Inasmuch as the transmission of a murmur may give a clue as to its origin, it is important to listen in various directions from the point of maximum intensity, including the right side of the chest and the back. The entire examination should be made without the hindrance of any garments.

It is doubtful whether any two individuals are endowed with the same ability to estimate the intensity, quality, and pitch of heart murmurs. Different examiners may not be in complete agreement as to the nature of the sounds heard and yet be in agreement as to the underlying pathology. In spite of the difficulties involved, heart murmurs are sufficiently important to merit special study. It cannot be too strongly emphasized that auscultation is only one feature of the cardiac examination. The electrocardiogram, x-ray examination, and the determination of cardiac function are all important. The variety of lesions which may cause murmurs is too great to permit a complete discussion. Only those conditions encountered with some frequency and permitting clinical diagnosis will be included in this paper. In congenital heart disease an abnormal communication between the arterial and the venous circulation exists. As long as this communication remains an arteriovenous shunt no cyanosis is seen, unless eventually the direction of flow is reversed by heart failure or some other complicating factors. It is important to emphasize this, for only if the shunt is from the veins to the arteries will the amount of reduced hemoglobin in the arterial blood be sufficient to cause cyanosis.

The acyanotic group in which no shunt is present and yet clinical diagnosis is possible includes dextrocardia and coarctation of the aorta. Mirror-image dextrocardia with complete situs inversus of the viscera produces no symptoms and in no way handicaps the apparently normal individual. The apex of the heart lies to the right and the cardiac sounds are simply reversed with no symptoms of circulatory embarrassment.

Coarctation of the aorta, a lesion usually seen in later childhood, consists of a partial or complete narrowing of the aorta, usually in the arch at a point where the carotids and the subclavian artery branch or between the latter and the site of the ductus arteriosus. The first symptoms noted may be tingling or coldness of the legs which is exaggerated by sitting or by cramped positions. Many children never complain of any discomfort and the diagnosis must be made on examination. Early discovery of the compensating type is important for the future welfare of the patient.

In this lesion the diagnostic findings are characteristic with all of the following present in a typical case: A harsh systolic murmur heard loudest in the interscapular area posteriorly (although all loud congenital murmurs may also be heard in this area) or more frequently along the left border of the sternum at the second or third interspace over the base of the heart; higher arterial tension in the arms than in the legs; unexplained aortic incompetence with diminished or delayed femoral or iliac pulse; enlargement of the left ventricle; and dilated, pulsating, and anastomosing vessels in the chest and around the scapula due to collateral circulation between internal mammary, deep epigastric, intercostal, and interscapular vessels. Of course, the diagnosis of coarctation of the aorta cannot be made by auscultation alone because the striking feature has been the variability of the auscultatory findings. However, to the clinician this knowledge may be used to advantage in evaluating the noncompensating and compensating coarctation.

The potentially cyanotic group includes the patent foramen ovale, patent interventricular septum, patent ductus arteriosus, and subaortic stenosis. In these conditions there are arteriovenous shunts which do not lead to cyanosis unless a transient or temporary increase in pulmonic pressure or terminal heart failure occurs. It is a common mistake to think that the fetal passages close promptly at birth. The incidence of functional closure of the foramen ovale rises sharply during the first 6 weeks of life reaching its maximum at about 3 months whereas occurrence of obliteration of the ductus arteriosus reaches its maximum at the

*Presented at the Pediatrics Teaching Session, Fifty-Third Annual Convention of the American Osteopathic Association, St. Louis, July 13, 1949.

end of 3 months, with 95 per cent closed at the end of the first year.

Patent foramen ovale rarely presents symptoms unless the opening is large in which case the patient's build is delicate and puberty is delayed. The contraction of the auricles is relatively feeble and the difference in blood pressure between the chambers is not great. It is, therefore, easy to realize that unless the lesion is great the velocity or amount of blood passing through the ostium would not produce a murmur. There is a great deal of controversy concerning the characteristic murmur as an aid to diagnosis. However, there is usually an early systolic or late diastolic murmur near the sternum in the third or fourth interspace.

Tremendous enlargement of the heart to the left and right, to the point of covering the entire anterior chest wall and causing movement of this wall, and pulsation of the vessels of the neck are seen. It must be remembered that these conditions occur only in the severe cases. The aperture is usually small and may consist only of a potential opening between two overlapping flaps through which a probe may be inserted, but through which very little blood may pass.

Patent interventricular septum is the most common of all congenital cardiac abnormalities and does not present a particularly difficult diagnostic problem in pediatrics unless accompanied by cyanosis. Then the difficulty lies in determining whether the cyanosis occurs because of the large size of the defect or because it is accompanied by some other lesion.

The patient with a patent interventricular septum is totally unaware of the existence of any cardiac abnormality. Physical development is unimpaired and the condition is found on routine examination. The murmur is audible at birth and remains constant throughout childhood. It is produced by blood coursing through the opening from an area of high pressure on the left to one on the right in which the pressure is low. As would be expected, the smaller openings produce louder, higher pitched murmurs than do large ones. Usually the tone is loud, rough, harsh, and blowing; systolic in time; and located most often over the body of the heart or over the third to fourth interspaces to the left of the sternum and directed to the apex. In well-marked cases a systolic thrill can be felt over the area of maximum intensity of the murmur and cardiac enlargement can be detected.

When the ductus arteriosus which connects the aorta and the pulmonary artery during fetal life remains open, providing a channel by which some of the oxygenated blood of the aorta passes into the pulmonary artery and courses through the lungs for a second time, it gives rise to the congenital defect known as patent ductus arteriosus. This condition, like so many other congenital cardiac diseases, usually lacks specific symptoms except that it is more common in females than in males and is apparently characterized by the presence of a growth-inhibiting factor. The fact that surgical treatment has been perfected accentuates the importance of early diagnosis of this condition. However, diagnosis cannot usually be confirmed before 1 year of age. Other important reasons that this lesion be recognized are that it is a relatively frequent site of bacterial endocarditis and often causes heart failure.

The murmur of patent ductus arteriosus is perhaps the most remarkable murmur in the entire field of cardiology. In the majority of cases no murmur is described in the early months and the systolic portion gradually develops during the first year of life. At some time during the second year a diastolic phase is usually recorded and the typical continuous roaring murmur makes its appearance in the third year. When the murmur is full-blown it fills the classical descriptions. It has been described as resembling the sound of a humming top, machinery, a mill wheel, a train in a tunnel, or rolling thunder. It is harsh and rumbling in character. The murmur is present through the entire cardiac cycle, is heard best at the first and second left interspaces, and is louder in systole than in diastole. Although this "to-and-fro" murmur may be detected in the back, it does not indicate concomitant coarctation of the aorta for, as previously stated, any loud murmur may be heard in the back. Murmurs of moderate intensity are common in this condition but slight murmurs are rare. The intensity of the diastolic murmur is usually one grade less than that of the systolic component. Usually a murmur is accompanied by a thrill in the same location. The point of maximum intensity of the thrill is somewhat more reliable diagnostically than the point where the murmur is loudest. Unfortunately, pathological studies have shown that patent ductus arteriosus may occur in the absence of the typical easily recognized murmur. Some cases, especially in children, have caused only a systolic murmur and some have been found when no murmur at all has been noted.

## CONCLUSION

The murmurs of congenital heart diseases are loudest over the body of the heart or at the base and, with the single exception of the continuous murmur of patent ductus arteriosus, all those that have been mentioned are systolic in time. In typical cases the differential diagnosis usually may be made by a study of the murmur alone. It should not be forgotten, however, that other means of diagnosis must not be neglected and that the patient's age and history are important. The clinical diagnosis of uncommon lesions is sometimes possible, but they are encountered rarely in practice and too much concentration on the rare clinical pattern is likely to do more harm than good because of the inevitable confusion that results.

1818 Pine Street

## REFERENCES

Adams, W., and Cassels, D. E.: Common forms of congenital heart disease. M. Clin. North America 28:95-106, Jan. 1944.

Banerjea, J. C.: Coarctation of the aorta in children. Indian J. Pediat. 11:142-144, July 1944.

Blumenthal, S., and Davis, D. B.: Coarctation of aorta in childhood. Am. J. Dis. Child. 62:1224-1232, Dec. 1941.

Burchell, H. B.: Variations in the clinical and pathologic picture of patent ductus arteriosus. M. Clin. North America 32:911-923, July 1948.

Gibson, S.: Clinical significance of heart murmurs in children. M. Clin. North America 30:35-44, Jan. 1946.

Green, H.: Practical experience with congenital heart disease. New York State J. Med. 45:877-881, April 15, 1945.

Levine, S. A., and Geremia, A. E.: Clinical features of patent ductus arteriosus with special reference to cardiac murmurs. Am. J. M. Sc. 213:385-394, April 1947.

Lyon, R. A.: Congenital heart disease, in Mitchell-Nelson Textbook of pediatrics, edited by W. E. Nelson. W. B. Saunders Co., Philadelphia, 1945.

Maliner, M. M., and Borow, H.: Simplifying clinical differential diagnosis of the most common types of congenital heart defects. J. Pediat. 22:664-672, June 1943.

Porter, W. B.: Effect of patent ductus arteriosus on body growth. Am. J. M. Sc. 213:178-180, Feb. 1947.

Wilkinson, K. D.: Diagnosis of congenital heart disease. Practitioner 153:146-154, Sept. 1944.

Pediatrics Supplement
Vol. 3, No. 1, May, 1950

# Nonsurgical Treatment of Congenital Heart Disease*

ROBERT R. TONKENS, D.O.
Kansas City, Mo.

In the past 20 years profound advances have been made in the treatment of the child with a congenital cardiac anomaly. The greatest and most dramatic strides have been made in the surgical treatment of these cases. However, the nonsurgical management of the patient with a congenital heart involvement has shown steady progress because of constant study and research in many parts of the world. Close observation of patients leads to a better understanding of each case and encourages a thoughtful, well-rounded approach to the diagnosis and treatment of these disorders.

The problems to consider in establishing an adequate therapeutic regime are many. They include the child's psychological adjustment to his own liability and to the impact of the world around him. The doctor must help in selecting the proper school and be a friend and counselor to the child in his difficulties. He must regulate the patient's physical activity as well and employ health safeguards such as immunization procedures and precautionary hygienic measures. The preoperative care in tonsillectomies and other surgical possibilities requires particular vigilance. Complications resulting from the anomalous cardiac state such as thrombosis and paroxysmal dyspnea need to be recognized promptly and given immediate attention. Cardiac failure and subacute bacterial endocarditis are ever-threatening dangers. The use of digitalis and the antibiotics together with specially evolved technics of treatment have contributed to the greater control and lessened mortality of these conditions.

Psychologically the patients must be encouraged to lead as normal a life as possible. As opposed to the cyanotic child, the child of normal color has a greater chance to live in normal surroundings. The awareness by others of his condition is not a paramount issue and the environmental pressure is not so acute and the very necessary social adjustment can be accomplished.

Cyanosis distinctly marks a child and sets him apart. Careful judgment must be used in establishing and fortifying his confidence. Excessive pampering and constant reminders of invalidism make for hypersensitivity and social maladjustment. Emphasis should be placed on aiding the patient to lead as normal a life as possible. This will bolster the feeling that he is not set apart or flagrantly different from others, although contact with other children may make him painfully aware of his differences. The cardinal rule should be that the child should not be made more aware of his condition than is necessary.

In the average case the congenitally defective heart can and will adjust to discrepancies over a period of 3 years. The severity of the malformation gauges the patient's activity. If the heart is normal in size and no cyanosis is present, activity need not be curtailed. With cardiac hypertrophy it is necessary that all activity that would put a strain on a normal patient be eliminated. It is a matter of considerable interest that the cyanotic child will limit his own activity without advice from parent or doctor. In these cases developmental exercises, modified to avoid exhaustion, are needed. In young children there should be a rest period before and after noon meals.

In the muscularly underdeveloped and cyanotic child regular exercises are of primary consideration. As the strength of the child increases the regulated exercises are reduced. Osteopathic manipulative treatment in the form of soft tissue therapy and correction of lesions has proved to be of great benefit in all cases.

As the child approaches school age the physician should aid in the problem of choosing a school that is compatible with the child's special needs. Only exceptional cases of cardiac anomalies must be placed in schools for the handicapped. The child should not be relegated to a niche marked "different." That is actually the feeling built up in children who are placed in cardiac classes—especially in those cases where no hardship would be incurred by attendance at a regular school. A normal atmosphere is important and the majority of congenital cardiac discrepancies can adjust to the regular school. Certain cyanotic children may attend regular schools. However, the instructor should be informed that the child's condition is not dangerous and undue concern is not necessary.

Keeping the child with congenital heart disease away from school will not protect him from disease, although this is commonly misunderstood. Contagious diseases will be picked up from other children at home; however, the usual childhood diseases are withstood very well.

Throughout the formative years the importance of suitable hygienic measures should not be neglected. Mothers should take particular precautions not to expose these children to anyone known to be suffering from infection. Any infection, though seemingly minor, warrants immediate attention.

Infants with cardiac anomalies vomit easily. Therefore these patients should have frequent small feedings. Rigorous attention, emphasizing strict asepsis, should be paid to preparing the formulae.

Dental supervision is also a most necessary part of hygienic measures, as cyanotic children are particularly subject to early dental caries. Malformation of the heart and fear of subacute bacterial endocarditis which is ever present, are not reasons to hesitate at filling or extracting a tooth. This is the viewpoint of Helen Taussig who makes the statement, "There is no malformation of the heart in which extraction is contraindicated."[1] A sulfa drug or penicillin is indicated before any extraction. It is extremely important in children under 10 years of age. The sulfa should be administered for 2 days prior to extraction and 4 days after. A 6 mg. per cent blood level of sulfadiazine is desirable. Penicillin in oil may be given in a single injection the day before and on the morning of extraction and for 2 days following.

Immunization procedures in children with congenital anomalies are essentially the same as in any normal child. Diphtheria toxoid, or diphtheria and tetanus toxoid, and pertussis vaccine may be used for prophylactic immunity. Smallpox vaccination is given

*Presented at the Pediatrics Teaching Session, Fifty-Third Annual Convention of the American Osteopathic Association, St. Louis, July 14, 1949.

on starting school. The vaccination may be done at a later date where there is extreme cardiac hypertrophy or severe debility and repeated illness.

In considering a child with a congenital cardiac lesion as a possible candidate for tonsillectomy or other surgery, the same sulfa and penicillin regime may be used prior to operation as is used before dental extractions. Hypertrophied or infected tonsils which block breathing in patients with cardiac anomalies must be removed if hazards are to be kept at a minimum. These patients can usually undergo routine surgery such as appendectomy without undue concern. However, where there is a prolonged and serious operation, a patient of low cardiac reserve needs digitalis before surgery.

Patients with congenital cardiac defects are very susceptible to the ordinary illnesses. However, they withstand them well when they have the benefit of the most reliable therapeutic measures of the day.

If septicemia is suspected, immediate chemotherapy is indicated. The known susceptibility to subacute bacterial endocarditis, which may occur without any recognized infectious background, should put the physician on the alert for any septicemia. Patients with cardiac hypertrophy are susceptible to pulmonary infections. The death rate from pneumonia can be kept low by early use of chemotherapy, osteopathic manipulative treatment, and penicillin with other appropriate measures.

The differentiation of cardiac failure and pulmonary infection is not always easy since the x-ray pictures may be similar. Both pulmonary infections and cardiac decompensation may be responsible for rales in the lungs. Cardiac failure in infants and young children may produce liver engorgement early, while dilatation of the nasal alae is not pronounced and the rate of respiration is not in keeping with other findings. However, both pulmonary infection and cardiac failure may be present simultaneously. Treatment entails osteopathic manipulative treatment, chemotherapy, and penicillin for pulmonary infections and digitalis and other appropriate measures for the cardiac failure.

Complications may develop because of abnormal blood viscosity. The patient with a chronic cyanosis may develop serious complications such as polycythemia due to increased viscosity. There may be headaches, convulsions, paroxysmal dyspnea, and cerebral thrombosis, which may also occur without increased viscosity as in infants with severe anoxemia. Dehydration is dangerous since withholding fluid in a cyanotic patient for more than 12 hours may cause cerebral thrombosis.

One must be alert to dehydration danger during any illness with elevation of temperature and during hot weather. Sometimes convulsions may be the first sign of cerebral thrombosis. In those cases where breakfast is to be omitted before surgery fluids must be given during the night. Therapy is directed toward diluting the blood and increasing coagulation time. Venesection, oxygen administration, and intravenous 5 per cent glucose constitute satisfactory therapy. If plasma is used, cross-matching of the patient's cells with the plasma is important because of the possibility of transfusion reaction with an increased number of red cells. Venesection can be of great aid if accomplished within 6 hours after development of cerebral thrombosis. One hundred to 250 cc. of blood may be withdrawn in a 2-to 6-year old child, depending on size, age, and red blood cell count. Intravenous fluids are of prime importance until the patient can take fluid orally, in order to avoid increased viscosity, to replace blood taken by venesection, and to allay further dehydration. Following venesection intravenous fluids should be administered continuously for 12 to 24 hours. Fluids should consist of 5 per cent glucose and normal saline and should be given separately. Hypertonic solutions should not be given.

Of the anticoagulants given following hemiplegia, heparin is the drug of choice as it acts more promptly than dicumarol. It should be given within a few hours after signs of hemiplegia to increase the chances of avoiding residual paralysis.

The dose of heparin given is 0.5 mg. per kilogram of body weight. The first dose should be given intravenously and should be of ample strength to prolong the clotting time of the blood 20 to 30 minutes and should be maintained for from 10 to 24 hours. This can be accomplished by continuous intravenous drip of 5 per cent glucose with heparin added. The amount used in the first dose should be added to 100 cc. of 5 per cent glucose given in 1 hour. If a slower drip is indicated, the amount of heparin must be increased. The amount of heparin must be gauged by checking the clotting time so that it will be maintained between 20 to 30 minutes. If the clotting time becomes greatly prolonged, 5 per cent glucose should be added to the bottle or the heparin stopped and only 5 per cent glucose given until the clotting time is less. Where bleeding occurs, small blood transfusions will normalize clotting time.

A common occurrence in infants and young children is paroxysmal dyspnea. Excessive exertion brings on attacks. The child may suddenly cry out, gasp for breath, and sometimes even lose consciousness. He should immediately be placed in the knee-chest position. Artificial respiration is necessary occasionally. Oxygen and morphine may be given. The dose of morphine is 1 mgm. for each 5 kilograms (10 pounds) of body weight, given intramuscularly. In severe attacks three quarters of the dose may be given intravenously and the remainder 15 minutes later. Recovery quickly follows the administration of morphine.

Many congenitally cyanotic patients eventually develop cardiac decompensation. The physician must be alert for signs so that he may be ready to administer digitalis. The signs of cardiac failure that are early in the adult occur late in the child, such as rales in the lung bases and edema of the extremities. The important diagnostic point in a child with cardiac decompensation is the respiratory rate which rises rapidly with decompensation. Liver engorgement begins when respirations of 30 per minute are reached. At 40 respirations per minute the lower margin of the liver is palpable at the level of the umbilicus. It should be remembered that finding rales at the bases of the lungs without liver engorgement is not indicative of cardiac decompensation in children.

The treatment of cardiac failure consists of rest, oxygen, venesection, diuretics, and digitalis. All dosage is based on body weight. Considering the adult dose as based on 150 pounds, a 50-pound child will take one-third of the adult dose. An infant weighing 10 pounds will take 1/15 of the adult dose.

Rest is imperative and if absolute rest is difficult to achieve, sedatives should be used freely. Morphine and codeine are used to relieve pain. For prolonged use codeine or other opiates are preferred since repeated use of morphine may cause abdominal disten-

tion. Four to 6 cc. of paraldehyde, administered rectally, will quiet a 6- to 8-year old child for about 10 hours.

Oxygen is very good for those who suffer from anoxemia resulting from cardiac failure or from congenital cardiac anomaly. Oxygen is helpful in cases where the pulmonary factors are contributing to the anoxemia as in venous-arterial shunt. Venesection may be used where there is pulmonary edema or impending thrombosis and should always be used with oxygen therapy.

Diuretics may be used in cases of edema. The dose is calculated on the basis of the patient's weight, *free of edema.*

Indications for the use of digitalis are the same for children and adults and include the following: (1) cardiac failure, (2) dilatation of the heart and gallop rhythm, (3) excessively rapid heart action (from 180 to 200 beats per minute), (4) auricular fibrillation, auricular flutter and paroxysmal tachycardia. Any tested stable digitalis may be used. Hypodermic administration is best in the acutely ill. Where there is severe edema, intramuscular injection is best, especially in infants. With the improvement of the patient, digitalis should be administered orally. Infants may receive the oral preparation in liquid form. It may be diluted in water and given by teaspoon, but should never be put in formula as refusal of some of the formula results in an insufficient dose.

The dose of digitalis is directly proportionate to the body weight. A child takes slightly larger doses than an adult in proportion to his body weight. To digitalize a child or infant completely the dose should be between 33 mg. and 45 mg. for each kilogram of body weight. If the total dose is to be given over a 3-day period it should be calculated on the basis of 45 mg. per kilogram. In severe cardiac failure the first dose may be one-half the total calculated dose; the second, one-fourth the dose 8 hours later, and the remainder given after another 8 hours. The next day, unless all evidence points to full digitalization, another 25 mg. is given.

The first signs of improvement in decompensation are disappearance of gallop rhythm, decrease in liver hypertrophy, and slowing of the respiratory rate. Full therapeutic effect is obtained before there is any evidence of toxicity. The maintenance dose is 10 per cent of the total digitalizing dose. For adults this is usually 0.1 to 0.2 gram daily. Children 5 to 10 years old usually require 50 mg. daily. Infants usually require 20 to 25 mg. daily. When digitalis has to be given over long periods it is best to omit the drug 1 day a week.

Digitalis should be withdrawn when any signs of toxicity occur, and should not be resumed until all toxic signs have disappeared; then a maintenance dose should be administered. A child who has taken digitalis since infancy does not necessarily require it all his life. As he grows older there is less danger of decompensation when the drug is stopped. Usually the heart will adjust to its load by 5 or 6 years of age and no more digitalis will be necessary.

It has been mentioned that patients with congenital heart anomalies are likely candidates for acute or subacute bacterial endocarditis. The exceptions to the rule are those patients with auricular septal defects.

The roughened endocardium of the congenitally defective heart is the weak point where bacteria that have entered the blood stream can lodge, causing endocarditis. Masses of organisms lodged in the endocardium are difficult to dislodge and treatment is not easy. However, the myocardium is not diseased and if the infection can be treated successfully the result is very good.

In anomalous formations of the heart, such as subaortic stenosis, where the bacteria are stopped on the subaortic shelf and on the valve above or in the ventricular septal defects where there is a shunt of blood through the defect, the blood is caught on the wall of the right ventricle at the pulmonary conus and there the vegetations form. In patent ductus arteriosus, it is at the pulmonary end of the ductus that the vegetations arise. The diagnostic signs will vary with the location of the vegetations.

Positive blood cultures are more easily obtained from cyanotic patients as the blood is shunted from right to left and thus the bacteria are thrown into the systemic circulation. An early positive blood culture is difficult to obtain if the shunt is left to right. Pneumonia and pulmonary infarcts are early signs and petechiae and enlargement of the spleen are late signs of acute or subacute bacterial endocarditis.

As we already know, bacterial endocarditis, both acute and subacute, is among the diseases most difficult to cure. However, at present, there is an increase in the number of cases reported as cured. The treatment of bacterial endocarditis in congenital anomalies of the heart is the same as in a normally formed heart; penicillin and chemotherapy — preparations that will sterilize the blood stream — are used. The only exception to this therapy occurs in cases of patent ductus arteriosus in which the treatment is ligation of the ductus. The patient with a patent ductus arteriosus is attacked in the region of the ductus arteriosus and in order to destroy the organisms, ligation of the ductus is imperative. However, if the case is of the chronic cyanotic type, ligation is not indicated as life may depend on the patency of the ductus arteriosus.

## SUMMARY

The nonsurgical management of the child with a congenital cardiac anomaly is enhanced by a detailed understanding of each case. It is then that supervision makes for a more comfortable patient. Two distinct types of cardiac anomalies, to all outward appearances, occur in the child with normal color and the cyanotic child. The psychic management, particularly in the case of the cyanotic child, and the guidance of activity are important factors of treatment. The cyanotic child in contact with other children becomes aware of being different; therefore, the approach in treatment should be based on complete understanding and creating a feeling of security.

Activity is gauged by the severity of the malformation. When there is no cyanosis or hypertrophy, activity need not be curtailed. With cardiac hypertrophy all activity that would put a strain on a normal patient is curtailed. A cyanotic child will limit his own activity. Developmental exercises are advised. Regulated exercise is decreased as the child increases in strength. In the average case the congenitally defective heart can and will adjust to its defect over a period of 3 years.

The physician should aid in choosing a school for the child. Only exceptional cases of cardiac anomalies need be placed in special schools or classes. The cyanotic child can attend the average school with explanations to the instructors that the child should be given consideration but that special concern is not necessary.

Contagious diseases are withstood very well. Nevertheless hygienic measures are of great importance in all patients with congenital cardiac anomalies. Mothers should not expose these children to anyone known to be suffering from infection. Immunization procedures are essentially the same as in any normal child. Dental supervision is necessary as these children are prone to early dental caries. A congenital malformation of the heart is no reason to hesitate in filling or extracting a tooth. Sulfonamide or penicillin is indicated before extraction of teeth.

Tonsillectomies and other surgery can be performed safely, using the same prophylactic measures used before dental extractions. Ordinary illnesses are withstood well under present-day therapeutic measures. However, septicemia calls for immediate chemotherapy. The chronically cyanotic patient may develop abnormal blood viscosity and must be watched for signs of thrombosis and paroxysmal dyspnea.

Cardiac decompensation may be ascertained by close watch of the respiratory rate and liver hypertrophy. The treatment entails rest, oxygen, venesection, diuretics, and digitalis.

Digitalis dosage is proportioned to body weight. Children take larger doses than adults. Digitalis is not necessarily needed during the entire lifetime. Usually the heart adjusts to its load in 5 or 6 years and digitalis is stopped.

929 Bryant Bldg.

REFERENCE

1. Taussig, H. B.: Congenital malformations of the heart. Commonwealth Fund, New York, 1947, pp. 537-552.

ADDITIONAL REFERENCES

Holmes, G. W., and Robbins, L. L.: Roentgen interpretation. Ed. 7. Lea & Febiger, Philadelphia, 1947, pp. 211-236.

Leaman, W. G.: Management of the cardiac patient. J. B. Lippincott Co., Philadelphia, 1940, pp. 351-352.

Lecture notes: Cook County postgraduate pediatrics course, 1946.

# Roentgen Findings in Congenital Malformations of the Heart*

JAMES N. FOX, D.O.
Dayton, Ohio

The recent progress in cardiovascular surgery has stimulated a greater interest in the detection and correct diagnosis of congenital malformations of the heart. The correct diagnosis of congenital heart disease is often difficult. It is only by careful analysis of the information obtained from a complete history, physical examination, roentgenographic and fluoroscopic studies, electrocardiography, and laboratory tests that we may expect to establish an accurate diagnosis.

The diagnostic accuracy of the roentgen findings increases as the age of the individual increases.[1] During the first weeks and months of life, relatively little information can be gained regarding the exact structure and the extent of many of the cardiac malformations. In later life rheumatic heart disease and bacterial endocarditis may complicate the congenital condition, preventing accurate roentgen evaluation of all the anatomical changes. There are, however, a limited number of congenital malformations in which the roentgen findings are conclusively diagnostic or highly suggestive of the morphological abnormalities. The following discussion will emphasize the malformations which may be corrected or benefited by modern surgical treatment and their usual roentgen findings.

## TETRALOGY OF FALLOT

The tetralogy of Fallot is probably the most common cardiovascular anomaly of the cyanotic group. Since the primary difficulty is inadequate circulation to the lungs, the condition may be ameliorated by a Blalock-Taussig operation.[2] The tetralogy consists of a combination of infundibular or pulmonary stenosis, interventricular septal defect, dextroposition of the aorta, and hypertrophy of the right ventricle with enlargement.

The usual cardiac shadow, as noted on the radiograph, resembles the shape of a wooden shoe. The shadow of the pulmonary conus and pulmonary artery is noticeably absent. This results in a concavity in the upper left margin of the heart shadow. The right ventricular enlargement results in upward displacement of the roentgenological apex, thus producing a transverse position of the heart. This results in an exaggerated left cardiophrenic angle. Care must be taken that this is not mistaken for left ventricular enlargement.[3] Due to the hypoplasia and dextroposition of the aorta, the ascending and horizontal divisions of the aortic arch course anteroposteriorly rather than in the normal oblique direction and may be lost within the densities of the sternum, spine, and superior vena cava.

Taussig[4] states that a right aortic arch is relatively common, occurring in 20 to 25 per cent of all cases of tetralogy of Fallot. When the aorta arches to the right, the aortic knob is frequently visible to the right of the sternum, within the shadow of the superior vena cava. Even when the x-ray or fluoroscopic examination does not show the aorta on the right, upon delineation of the esophagus by a barium mixture, the esophagus is seen to lie to the left of the great vessels. The esophagus is deviated to the left and indented by the aorta on its right margin. The direction of the aortic arch is very important in planning the surgical approach in the treatment of this anomaly.

The hilar shadows should be carefully studied. Due to the diminished pulmonary circulation, the lung fields appear abnormally clear. However, in older children, a collateral circulation may develop and the hilar shadows increase. On fluoroscopic examination, the shadows will be noted to be nonpulsatile.

The Eisenmenger type of tetralogy of Fallot differs from the usual type in that there is dilatation rather than stenosis of the pulmonary artery. The radiographic findings also differ. In this type, the pulmonary conus and artery usually cast a shadow along the upper margin of the left heart border. The trunk of the pulmonary artery and its branches are dilated. There is frequently insufficiency of the pulmonary valve, which may be manifest by an increase in the amplitude of the pulsation of the pulmonary artery and its branches, which is visible on fluoroscopy as a

*Presented at the Pediatrics Teaching Session, Fifty-Third Annual Convention of the American Osteopathic Association, St. Louis, July 14, 1949.

hilar dance. The Blalock-Taussig operation is of no benefit in this condition.

### PATENT DUCTUS ARTERIOSUS

A patent ductus usually occurs as an isolated anomaly, but it may be associated with other congenital heart abnormalities. The patent ductus is normal during fetal life. Obliteration usually takes place shortly after birth, but may be delayed for 6 months or even a year. Ample time should be given for normal closure before the application of surgical therapy.

The contour of the heart, as shown by x-ray, is subject to considerable variation. The feature most commonly described as characteristic of this malformation is the accentuation of the second curve to the left of the sternum. This shadow is caused by dilatation of the pulmonary artery proximal to the ductus and dilatation of the pulmonary conus of the right ventricle. This is known as the cap of Zinn.[5]

Burwell and Eppinger[6] have studied the disturbed circulation of this lesion and the mechanical factors responsible for the roentgen changes. They state that the left ventricle pumps two to four times the volume of blood put out by the right ventricle. This increased load causes hypertrophy, dilatation, and excessive pulsations of the left ventricle. As a result of the shunt of the stream of blood, from the high-pressure aorta into the low-pressure pulmonary artery, exaggeration of the bronchovascular markings is produced. As shown by fluoroscopic examination the amplitude of the aortic pulsation is increased as is the pulsation of the pulmonary conus. Increased amplitude of the hilar pulsations may be present due to increased pulmonary pulse pressure. A true hilar dance probably is due to associated pulmonary valve incompetency.[7]

Accurate diagnosis of this lesion has become important since successful ligation was accomplished by Gross.[8] Patent ductus arteriosus must be differentiated from atrial septal defects which will be discussed later.

### COARCTATION OF THE AORTA

This is the third and probably the least common congenital malformation of the heart amenable to surgical procedures. The most reliable and classical finding on roentgenographic examination is the erosion of the ribs. This results from dilatation of the intercostal vessels which form a part of the collateral circulation. The scalloping which occurs along the lower margin of the ribs may be so definite that diagnosis can be made from this single positive finding. It is, however, rarely seen before the age of 12 to 14 years.

The outstanding change in the cardiovascular shadow is in the aorta. The ascending aorta may be dilated and visible to the right of the sternum. The size of the aortic knob to the left is subject to great variation. In some cases it may be strikingly inconspicuous while in others it may be unusually prominent. In the left anterior oblique position the ascending aorta is readily seen and may be accentuated due to the absence of the descending aorta. This also causes the aortic window to be unusually clear. The actual site of narrowing may at times be seen. Fleischner[9] has reported that there may occur a bulbous or spindle-shaped dilatation of the descending aorta immediately beyond the constriction. This dilatation can be recognized roentgenologically by a typical displacement of the esophagus. In cases where operation is planned knowledge of this anatomical detail is of value to the surgeon. As would be expected, there is some hypertrophy of the left ventricle, however, rarely to any extent unless an insufficient bicuspid valve is present.

In addition to the three discussed above, many other anomalies may occur in the development of the heart and associated great vessels. They may occur either as a single entity or in a variety of combined forms. Only a few of the more common types will be touched upon in this paper.

### INTERAURICULAR SEPTAL DEFECT

The wall separating the two auricles may be defective as a result of an arrest in the development at the stage of formation of the primary or secondary septa or a large foramen ovale may remain patent. Radiographically, the presence of an interauricular septal defect is suggested by a combination of right auricular and right ventricular enlargement, with or without left auricular enlargement; the presence of a normal sized or a small left ventricle, a narrow hypoplastic aorta; and an extremely dilated pulmonary arterial tree.

Since the pressure within the left auricle is greater than that in the right auricle, blood is shunted from left to right, thereby causing the enlargement of the right auricle. As the right ventricle receives the large volume of blood from the right auricle, it also enlarges. This greater volume is further passed on to the pulmonary vessels, resulting in their dilatation. In Lutembacher's syndrome, the auricular septal defect is complicated by mitral stenosis. This results in even greater enlargement of the pulmonary artery. This malformation is one which causes a true hilar dance.

### INTERVENTRICULAR SEPTAL DEFECT

Defect of the interventricular septum may occur as a solitary lesion or in combination with other congenital abnormalities. If the defect is small, no change in the cardiac silhouette may be noted. If the defect is large the shunt of blood is from left to right resulting in right ventricular enlargement. The left ventricle also enlarges under the stress and strain of maintaining both the general circulation and the volume of blood shunted to the right ventricle. In early life no pulmonary artery changes are noted. In later life the right ventricular conus enlarges followed by enlargement of the pulmonary artery.

### DEXTROCARDIA

Congenital dextrocardia frequently is of no clinical significance since it is merely the mirror image of the usual position. It may occur with or without situs inversus viscerum. When dextrocardia is combined with an additional cardiac malformation, the clinical diagnosis is complicated. This anatomical variation is believed to increase the liability of bronchiectasis.[10]

### SUMMARY

1. The part played by the roentgenographic examination in the diagnosis of congenital malformation of the heart is discussed.

2. The malformations which may be corrected or benefited by modern surgical treatment are emphasized, namely, tetralogy of Fallot, patent ductus arteriosus, and coarctation of the aorta.

3. A few of the more common types are also discussed.

Grandview Hospital
405 Grand Ave.

### REFERENCES

1. Caffey, J.: Pediatric x-ray diagnosis. Year Book Publishers, Chicago, 1945.

2. Blalock, A., and Taussig, H. B.: Surgical treatment of malformations of the heart in which there is pulmonary stenosis or pulmonary atresia. J. Am. M. A. 128:189-202, May 19, 1945.

3. Lloyd, P. T.: Roentgenology in congenital heart disease. Unpublished paper presented at the meeting of the American College of Osteopathic Internists, Chicago, July 19, 1947.

4. Taussig, H. B.: Congenital malformations of the heart. Commonwealth Fund, New York, 1947, p. 121.

5. Abbott, M. E.: Congenital heart disease, in Nelson's Loose Leaf Medicine, Thos. Nelson & Sons, New York, 1946, Vol. 4, pp. 307-421.

6. Eppinger, E. C., Burwell, C. S., and Gross, R. E.: Effects of patent ductus arteriosus on circulation. J. Clin. Investigation 20:127-143, March 1941.

7. Schwedel, J. B.: Clinical roentgenology of the heart. Paul B. Hoeber, New York, 1946.

8. Gross, R. E.: Experiences with the surgical treatment in 10 cases of patent ductus arteriosus. J. Am. M. A. 115:1257-1262, Oct. 12, 1940.

9. Fleischner, F. G.: Occurrence and diagnosis of dilatation of the aorta distal to the area of coarctation. Am. J. Roentgenol. 61:199-201, Feb. 1949.

10. Adams, R., and Churchill, E. D.: Situs inversus, sinusitis bronchiectasis; a report of 5 cases, including frequency statistics. J. Thoracic Surg. 7:206-217, Dec. 1937.

# First the Infant—An Entity*

BERYL E. ARBUCKLE, D.O.
Philadelphia

As the human creature emerges from the protected neonatal existence into the precarious stage of infancy it finds itself thoroughly and completely occupied with one main objective, that of growth. Despite all hampering circumstances this continues. The infant is endowed with automatic control of vital functions such as respiration, circulation, digestion, and regulation of body heat.

The human infant is the most helpless of newborn creatures and remains so for the greatest length of time but, fortunately for the survival of the race, there are many so-called behavior patterns which are indeed most important defense mechanisms. There is a definite dislike of restraint, a reaction of which we make great use in cranial treatment. Restriction of the legs is ofttimes sufficient to bring forth such remonstrance that adequate respiratory cooperation is provided to accomplish the objective of treatment.

Likewise of vital importance in the infant is the antisocial, compulsive demand for gratification of such wants as hunger, warmth, and comfort. There is a pattern for the evolution from this uncontrolled protective mechanism of crude behavior to the polished mask of controlled behavior dictated by social standards. However, this change is often expected too early. It should be remembered that display of the inhibitory control and masked actions to undesirable situations expected of the adult would be as strange as would be speech in the newborn.

The baby grows as a unit; the physical, mental, and emotional states and degrees of growth cannot be considered separately, for they are very interdependent. As the child grows in size so it develops greater ability to feel, think, and act, following with amazing accuracy its pattern of growth, obstruction in any part of which will result in abnormality of proportionate degree.

The above is well understood in pediatric teaching, but most unfortunately the observation that the orderly progress of growth varies considerably has been, and still is, too frequently accepted heedlessly without evaluation. The resultant erroneous deduction that because infancy extends over so long a period there is time to compensate for these rate changes, is a disastrous hindrance in the corrective management of the myriads of needless abnormalities endured by many hundreds and thousands of human beings.

Due to the frequent failure to realize (or might it not be just procrastination in the realization?) that the termination of this prolonged period of infancy is being too greatly delayed, obstruction to normal progress is permitted to remain. Growth continuing according to the laws of Nature will be abnormal or distorted in proportionate degree to the amount of obstruction, and the pattern of growth of the individual will become further warped depending upon the length of time the cause of this abnormal growth pattern is left uncorrected.

The first human requisite is that of contentment. The newborn which shows preference in position should not be humored, but rather the cause for that preference should be determined and, as is usually possible, be corrected. A newborn as well as an older infant should be content on either side or in prone or supine positions. The older child with the flat occipital area does not have that abnormality because his mother insisted that the baby lie on the back of his head. Most probably the infant's preference to remain in that position was catered to rather than due consideration being given to the cause of his abnormal desire. A baby with no difficulty will not keep its head in one position too long.

Just as an adult who has sciatica carefully arranges his position so will the infant struggle for comfort. A restriction within its mechanism which is sufficient to provide the baby with a preference in position will, in many instances, be sufficiently great to cause restriction or alteration in pattern of growth, with resultant impairment of development as a unit. The infant may begin to fret and to vomit too easily or too persistently so that its mother becomes increasingly upset with the disturbance and added trouble, and its doctor is perplexed because many changes in formula do not solve the problem. Instead of the difficulty being with the formula it is with the recipient of the formula, and osteopathically restoring the infant's mechanism to normalcy often ends permanently all need for change. Likewise early correction may prevent development of a handicapped individual, thus giving to the world one more useful citizen instead of a possible State charge.

Why should the infant have its contentment so disturbed? The answer lies in the fact that so great a proportion of development takes place before birth. This stage of development and its consequences, which make the Chinese custom of adding a year to an individual's age seem very logical, are too often overlooked. During the embryonic state blood dyscrasias and developmental anomalies are responsible for faulty development of the nervous system. Illness of the mother during pregnancy, apart from the possibility of interfering with the development of the embryo, may render the baby less able for the experience of delivery and its recuperation from this adventure may be disastrously prolonged.

Moulding of the infant cranium to reduce its capacity and facilitate passage through the birth canal is an expected natural procedure. If there has been no occurrence of disturbing factors which might render the infant insufficiently strong for the experi-

*Presented at the meeting of the Osteopathic Cranial Association, St. Louis, July 10, 1949.

ence of birth, or to regain its prenatal equilibrium thereafter, the moulding will of itself be corrected in a few days unless it has been excessively severe. If it has been excessive because of an unusually difficult delivery, or if the baby is too weak, too fatigued, or depressed from sedation given to the mother, the moulding will not be entirely corrected without help. Therefore, there may be seen a little skull with "A forehead sloping on one side or one side of the back of the head flat," as observed over a century ago by W. J. Little,[1] or there may occur various other types of confusion of the cranial bones. Following in the wake of this confusion there may develop any one of many different human maladies. At the nascent stage the brain still has the greatest part of its development before it, and if there is no room for adequate growth there will result crowding of parts of the brain that will make normal function an impossible occurrence.

There may also be mechanical reasons during development that may result in a disturbance of the craniosacral mechanism and this disturbed pattern may be exaggerated or decreased during delivery. The long axis of the developing baby may be oblique in relation to the long axis of the uterus. Hence the compressive forces which are transmitted through the spine of the developing infant against the base of its skull, by the uterine contractions felt by the mother during the last weeks of pregnancy, will be oblique in relation to the long axis of the fetus. These forces may be responsible for the beginning of disturbance in alignment of the parts of the developing occiput about the foramen magnum. The mechanics of this confusion were described in the paper, "Through the Cranial Base."[2]

The uterus, having carried its contents to term, experiences constant transverse contractions which start in the fundus and initiate labor. The time from the beginning of labor to complete dilatation of the cervix is dependent upon the duration and intensity of the uterine contractions as well as the gradient of diminishing physiologic activity from the fundus to the lower uterine segment.[3] These forces, also oblique in relation to the fetal spine but in different planes, are added to those transmitted against the fetal skull during the previous weeks. In addition to this factor there is great variation in the craniovertebral angulation, the degree of which has much bearing on the consequent confusion of the cranial base. It has been noted when observing the presenting head at this stage in delivery that it will recede between contractions, and with each contraction will assume a more synclitic position.

When cranial moulding, often in one particular area, is started in the later weeks of pregnancy, complete correction cannot be achieved in the first few days of neonatal life, while the moulding produced during labor and delivery is usually correctable with one or two treatments during the newborn period. There is also an alteration of tensity of dural membranes due to the long standing moulding which helps us understand why many birth injuries are found in children delivered by cesarean section. In excessive moulding during labor and delivery and in the too frequent turricephalic cranium there is not only altered tensity of the dural membranes, but also a disturbance in the elasticity of various planes.

The construction of the newborn skull, the differences between the cranium at birth and that of the adult, and some of the effects of confusion of the cranial base have been described in previous papers as also has been the detailed construction of the dural membranes with the very definite and consistent pattern of the stress fibers.[4] Continuing from these facts we shall consider development of spinal and cranial curves, some of the causes of their disturbances, and the structures which maintain these disturbances. There are four primary curves in the spine: starting caudally they are the sacral curve with posterior convexity, the lumbar curve with anterior convexity, the dorsal posterior convexity, and the cervical anterior convexity. There are two primary curves in the cranial axis: that portion of the cranium between basion and nasion, the sphenobasilar with its posterior or cephalward convexity, and the spheno-ethmoid with its anterior or caudad convexity.

As there are secondary lateral curves in the spine, so also may there be secondary lateral curves in the cranial axis as sidebending rotation of the sphenobasilar to one side or the other produces a lateral convexity to the side of rotation. We anticipate and frequently find the spheno-ethmoid lateral convexity to the opposite side. We may, however, find each of these lateral curves with their convexity to the same side; the compressibility of the body of the sphenoid containing the sphenoidal accessory air sinus permits this in a lesion of the second order.

Cranial students fully understand the osseous relationships in a type one sidebending rotation lesion of the sphenobasilar. But the osseous relationships and conformities offer a different pattern in a lesion of the second order. The production of type one and type two cranial lesions may be compared to production of such types of spinal lesions.

At autopsy we have frequently observed the middle cranial fossa on the concave side of the sphenobasilar to be much deeper than the wide middle cranial fossa on the convex side. In the second type there is also observed a strange thickening of certain stress fiber groups with a definite change in the usual tensile properties in other planes. There appears to be an increased toughness and lack of resiliency in the cerebellar group and the petrous suspensory group on the concave side.

The successful correction of type one and type two cranial lesions depends upon as careful consideration of application of directional forces as must be exercised in the different corrective mechanics of type one and type two spinal lesions.

As stated by A. T. Still,[5] "When you know the difference between normal and abnormal you have learned the all-absorbing first question, that you must take your abnormal case to the normal, lay it down, and be satisfied to leave it." We have learned by experience that the thorough understanding of a lesioned pattern is necessary before correction can be made and maintained.

The same terms as those applied to the spine in the teaching of technic by the Academy of Applied Osteopathy are very applicable to cranial patterns. The newborn skull, with appearance in transverse silhouette similar to that of the mushroom-shaped cloud rising from the explosion of an atom bomb, is described as being in bilateral latexion. Latexion to one side or the other presents a horizontal groove or depression on the side of latexion, while the opposite side presents in comparison a vertical convexity. There may occur to one

side or the other a posterior or anterior rotexion, that is of the posterior or anterior vertical fibers; which will present, according to its location, a bulging of the posterior parietal or frontal area with an anteroposterior shortening of the same side. Posterior rotexion involves also the cerebellar and inferior falx horizontal fibers while anterior rotexion involves also the lateral groups of the crista galli tripod.

Just as there are breaks in the curves of the spinal axis so are there breaks in the curves of the cranial axis with just as great if not greater complexity in resultant variations.

As previously described, abnormal changes in skeletal structure, including the production of lateral curves of the spinal and cranial axes, may be started in embryonic life. These abnormal changes and various confusions in cranial base and sacral alignment can be corrected easily in the newborn and young infant and the baby being thus delivered to a state of physical contentment has a much better expectancy of development of the entire unit in a normal manner than has the untreated child.

As the baby grows in size he also develops his various abilities. The ability to sense his surroundings enables him to act responsively and this ability to act permits him to exhibit appropriate behavior. With disturbance of neurologic development this sequence is impaired. Early recognition of this disturbance and the correction of its causes are of paramount importance to the well-being of the infant.

But what of the cases in which the variations of unit development are not observed, or when observed, their significance is not understood? The result is the handicapped child, guarded and protected by its parents, and a still greater tragedy is that the handicapped child, unhelped by treatment, grows into the handicapped adult, buffeted and shunned by society.

In routine history taking of the handicapped child the parents are asked, "When did you first notice that your baby had any difficulty and when did a doctor agree with you?" There is often an incredible length of time between these two observations and consequently a tragic delay in treatment. A mother's concern about her infant should never be discredited; she should be comforted with reassurance, but the possibility of any cause for her complaint should be thoroughly investigated.

The immaturity of bony development of the infant skull has been described elsewhere.[6] The degree of immaturity must be well understood and constantly remembered during any cranial treatment to the newborn, the infant, or the young child. The bones are very frail and no bony sutures are as yet developed; therefore, no technic based on sutural articular surfaces may be used, for attempting such technic would result in interference of development of the sutures, which might produce a greater difficulty than the one originally presented for treatment.

In the infant and the young child corrective forces must be directed entirely through the membranes with constant thought of freedom of all developing bony structures. The application of forces is upon the base of the cranium, that part developed in cartilage and infinitely firmer throughout life than the vault which is developed in membrane, and is directed through the fans of the various groups of stress fibers. As the boy scout would attempt to tighten the guy ropes rather than lift up the canvas of his collapsing tent, so in cranial consideration an attempt is made to normalize the tensity of the dural stress fibers and hands must be kept off the vault of the newborn. This area has already been subjected to a great deal of trauma but under conditions where Nature was providing confining counteractive forces not entirely understood and impossible to duplicate. With these forces removed, further and unnecessary trauma to this area would be most unwise and of no help.

Generally, in describing the moulding observed in a newborn skull, the part receiving entire consideration is the vault, the area which can be seen. For moulding of the vault to exist there must be disturbance of the base, the type and degree of which can be determined only by palpation. During the normalization of the latter the reduction of the moulding of the vault may be watched as may also the restoration of the normal boundaries of the six fontanels with apposition of the contiguous bones in expected planes, thus allowing normal development of the complicated fine cranial sutures. As the pattern of the cranium is dependent upon its base and changes in the craniovertebral junction,[7] so is the pattern of the face dependent upon the sphenoid and its effect upon the craniofacial junction.

In the newborn infant and very young child correction of a badly distorted or asymmetrical face is a natural consequence in the series of events following the proper alignment of the cranial base. Because of this sequence of events the sphenoid is balanced in its planes and so is the frontal, a dermal bone having tremendous influence upon the symmetry of the face.

In maintained developmental lesion the frontal bone also has tremendous effect upon the sphenoid, the diverging pterygoid plates of which, in turn and in conjunction with the ethmoid, direct the planes of the face. The ethmoid, a basilar bone, part of which is included in the cranial axis, is naturally affected developmentally by any distortion of the ethmoidal notch of the frontal.

If these facts are borne in mind as well as the fact that the facial skeletal structures continue to grow long after the cranial skeletal structure has reached its maximum growth there will be less harmful pressure exerted in the mouth of an unfortunate infant. Until this development is thoroughly understood it is safe and wise to keep adult fingers out of an infant's mouth and when these phases are understood it becomes increasingly unnecessary to apply corrective forces within a very young mouth where so much more damage than that originally presented can be very easily created.

The only corrective force ever necessary in the mouth of a newborn infant is the force applied by the tongue of the infant, the finger of the operator doing absolutely no more than localizing and directing this force. This amount of application within the mouth may be of no avail and even harmful if the forces along the guy fibers are not properly directed and completely controlled.

Think of the disproportion between the size of an index finger of an adult and the lateral pterygoid plate of a 3-year old child! In the newborn there is danger that any pressure on the developing maxilla may be responsible for nasal or midfacial prognathism or future buckling of the nasal septum with a resultant trail of disturbances in later life. Undue pressure on the developing alveolar process, that spongy, springy structure which is later to support the teeth and when relieved of that duty is resorbed, may result in dis-

turbance of relation of the teeth to the true bony structure. If this disturbance occurs the teeth may be held at an angle to the true bony substance of the maxilla and mandible and mastication tends continually to increase this angle. Manipulative efforts later will then merely prevent this phenomenon from producing actual bony lesions of developmental nature and of truly great inconvenience in later years if the wearing of dentures becomes a necessity.

Such disturbances about the face may cause further inconvenience to the individual as well as a possible tragic disfigurement, but the resultant disturbance within the cranial bowl is far more detrimental to the human mechanism and here presents the greatest concern. The cephalward pressure against the attachment of the anterior vertical falx fibers, before the development of the protective buttresses, is most likely to produce atony of this particular group of fibers. The degree of disturbance is dependent upon the state of malalignment of the portions of developing bone constituting the base of the skull. Decrease in tone spreads in varying degrees to those groups of fibers continuing with the caudad and cephalward part of the anterior vertical falx group.

It is most important to maintain the tensity of the dural membranes. It is known that the anterior posterior growth of the skull is dependent upon growth at the sphenobasilar junction. Just as the sutural lines in the vault develop toward the ossification centers thus producing the growth lines in the dermal bones, so does the cartilage at the above mentioned symphysis proliferate toward the ossification centers of the occiput and sphenoid.[8] The union between these two bones is completely ossified toward the end of adolescence and when this fusion is complete, movement at the sphenobasilar junction is that of flexibility in degree dependent upon the cancellous state of the basilar plate, the size of the foramen lacerum on each side, and the freedom of movement of the petrous portions of the temporal bones.

In conclusion the objective in cranial treatment of the newborn is to restore alignment of the developing bones, reducing to the utmost possibility all crowding of these parts by restoring normal tensities throughout the cranial and spinal membranes.

In cranial considerations it is even more important than in general pediatrics to remember that the infant must never be treated as a little adult, though it is often advantageous to treat the adult by methods used for the child. Indeed the adult may be most appreciative and greatly amazed by the effect on himself of cranial treatment following the principles applicable to the very young skull.

920 N. 63rd St.

REFERENCES

1. Little, W. J.: Cited by Ehrenfest, H.: Birth injuries of the child. D. Appleton Co., New York, 1922.
2. Arbuckle, B. E.: Through the cranial base. J. Am. Osteop. A. 48:458-460, May 1949.
3. Reynolds, S. R. M.; Hellman, L. M., and Bruns, P.: Patterns of uterine contractility in women during pregnancy. Obst. and Gynec. Surv. 3:629-646, Oct. 1948.
4. Arbuckle, B. E.: Cranial reinforcements from a manipulative standpoint. J. Am. Osteop. A. 49:188-194, Dec. 1949.
5. Still, A. T.: Autobiography. Published by the author. Kirksville, Mo., 1897, p. 228.
6. Arbuckle, B. E.: Cranial aspects of the newborn. J. Am. Osteop. A. 47:507-511, May 1948.
7. Arbuckle, B. E.: Cranio-vertebral junction. Year Book of the Academy of Applied Osteopathy. Edwards Brothers, Inc., Ann Arbor, Mich., 1949, pp. 147-150.
8. Sicher, H.: Oral anatomy. C. V. Mosby Co., St. Louis, 1949, p. 103.

# Diagnosis of Allergy and Desensitization*

HAROLD L. BRUNER, D.O.
Philadelphia

It is necessary for the pediatrician to be aware of the possibility of allergic manifestations in order to make correct differential diagnoses. Unfortunately knowledge concerning allergy has been so recently acquired that it was not included in the training of many older practitioners and consequently is not considered by them in making their diagnoses.

Many cases of asthma have developed because physicians have failed to recognize and properly treat allergic rhinitis, allergic bronchitis, atopic eczema, cyclic vomiting, or croup in infants. Parents are told that their children will outgrow their affliction and further study is not made nor proper treatment instituted. Thus begin many problem cases of asthma seen later in life.

The first requisite in diagnosis is the realization that allergy may be responsible for a given set of symptoms. Infants and children are subject to many allergic manifestations, especially those who have a positive family history of allergy, and particularly when allergy occurs in both parents.

Allergic rhinitis, atopic eczema, and asthma are not the only manifestations of allergy observed in infants and children, as many practitioners believe. Gastrointestinal allergy is very common in infancy. Much of the colic, regurgitation, distention, diarrhea, and constipation of early infancy is due to food allergy. Pylorospasm, canker sores and recurrent cyclic vomiting may be due to allergy. These conditions are usually the forerunners of allergic migraine of later years.

Food allergy is the usual cause of eczema during infancy and may possibly cause excoriations and chafing. Recurrent colds and bronchitis and bronchial asthma may develop about the second year, especially in infants with subsiding eczema and croup. Allergic toxemia, the occurrence of fever without evidence of infection, may be due to either a food or a drug allergy. Idiopathic epilepsy deserves an allergic investigation, after a thorough neurological study. Enuresis may disappear with proper allergic management.

Since allergic manifestations cover such a wide range of disease entities, it is very important to rule out organic pathology before extensive allergic study is undertaken. Careful physical examination and laboratory tests must be performed. Complete blood count, determination of sedimentation rate, tuberculin tests and x-ray examination should be made as a routine procedure.

While we are still a long way from solving all the problems of allergy the unfortunate individuals

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, New York, April 1, 1949.

suffering from allergic conditions can, and are, being given a great deal of aid with proper diagnosis and management. First, and most important, a detailed history, including a discussion with the child's parents to establish the presence or absence of the outspoken allergic manifestations, must be obtained. Allergic manifestations should also be searched for in the present and past history of relatives. Previous serum and vaccine treatments should be noted, with dates of administration. These dates should then be compared with dates of onset of allergic symptoms.

### SKIN TESTS

For years there has been a controversy as to whether the scratch or the intradermal test is the more reliable. Most allergists believe it is best to use scratch tests first and to follow with intradermal tests if negative results are obtained with agents which are suspected on clinical grounds. I have found intradermal testing more sensitive than scratch testing for food allergens, and the scratch method quite satisfactory for inhalants. It must be mentioned that severe constitutional reactions can occur with intradermal testing. For this reason not more than five intradermal tests are made on infants and children at one time. It must be emphasized that positive skin tests may reveal past, present, or future sensitivity (as in the interpretation of positive Mantoux test for tuberculosis). Also, it should be remembered that in infants the skin may be incapable of producing antibodies.

The indirect method of testing by the Prausnitz-Küstner technic is indicated in case of severe dermatitis, dermographism, or contagious skin infection; in infants or children too small or too ill to be subjected to an extensive series of skin tests; and as a check on the accuracy of an unusual number of positive direct tests. Patch tests are used in the diagnosis of allergic contact dermatitis. Conjunctival and nasal tests are infrequently used in infants and children.

### ELIMINATION DIETS

The diets perfected by Rowe[1] for infants and young children have been used successfully both in the diagnosis and the treatment of allergy. Milk, cereal, and fruits may be eliminated and a soy bean product is usually substituted. However, since soy bean products have become popular it must be remembered that children so treated may manifest sensitivity to soy beans at some later date.

### CONFIRMATORY FINDINGS

A patient with nasal allergy usually presents a typical nasal mucosa—pale, pearly, and boggy, and he may have mucous polyps. In infection the mucosa is usually reddened. The finding of eosinophils in the nasal secretion further confirms the diagnosis of allergy.

When sputum is available, it should be examined and a smear stained with Wright's stain for the demonstration of eosinophils. It should also be examined for tubercle bacilli and cultures should be made to gain knowledge of possible infecting bacteria and of their susceptibility to the various antibiotics.

The finding of blood eosinophilia is also confirmatory, but eosinophils may or may not appear in allergic conditions. In suspected gastrointestinal allergy, stool studies should be made for eosinophils and for parasitic infection.

### DESENSITIZATION

The safest clinical procedure consists of repeated injections of gradually increasing amounts of antigen or allergen. This may be done slowly, as in preseasonal pollen desensitization, or much more rapidly, as in the procedure of desensitization to horse serum. The more rapidly the dose of antigen is increased, however, the greater is the danger of systemic or constitutional reaction.

Unfortunately complete desensitization is very rarely accomplished clinically. Cooke[2] has suggested the term "hyposensitization" as being more appropriate than "desensitization."

Children under 6 years of age should rarely undergo pollen hyposensitization and doses of pollen extract used in patients between 6 and 12 years of age should be about one-half those given the adult with comparable sensitivity. The pollen extract is administered by hypodermic injection in the lateral aspect of the upper arm at 4- to 7-day intervals. Preseasonal therapy is the method of choice for pollen-sensitive children. Injections should be started about 3 months before the anticipated occurrence of symptoms and be continued throughout the pollen season at a dosage level established before the season begins. Children over 6 years of age and adults should have pollen hyposensitization to prevent future asthma. However, overdosage, which is the most common error of pollen therapy, must not be allowed to occur.

Food avoidance is the best treatment of food allergy. All possible traces of the offending foods must be eliminated, as pork and beef in gelatin, et cetera. Hypodermic food desensitization is rarely used today. Failures with this method have been consistently reported. Oral desensitization has also failed to give good results. I have used the specific oral propeptan method of Urbach[3] with favorable results, but this procedure is not consistently satisfactory. Nonspecific protein therapy, such as autohemotherapy and the use of stock vaccines, may be indicated for general hyposensitization.

Vaccine therapy in the treatment of allergy is becoming important, even though many authors doubt the role of bacterial allergy in children. The failure of vaccine therapy can be blamed on the improper use of this therapeutic agent. Autogenous vaccines, properly obtained, properly prepared, and properly administered, can be good therapeutic agents in the management of certain allergic conditions, especially when other rational forms of treatment are not neglected.

The pathogens most frequently obtained from autogenous cultures are Streptococcus viridans, hemolyticus and nonhemolyticus; pneumococci and Staphylococcus aureus. Testing is done intracutaneously with 0.02 cc. of vaccine and reactions are read after 15 to 30 minutes and again after 24 to 48 hours. Vaccines killed by heat at 60 C. are more antigenic than those killed at 100 C.

In vaccine therapy each patient is a law unto himself. Dosage should be determined by age and weight of the child. It is better to begin with a very small and assuredly harmless dose and gradually increase it at 3- to 7-day intervals until some reaction is observed. A minimal effective dose is followed by a feeling of well-being and toxic symptoms will not be observed. Too large or too frequent doses are followed by severe focal reactions and an exaggeration of the patient's symptoms. For example, a patient with chronic bronchitis or bronchial asthma will develop an increase in cough or an acute attack of asthma.

It is very important to remember in using vaccines that they are potent agents, capable of doing

harm if given in excessive dosage or if injudiciously administered. Debilitating diseases, as active tuberculosis, are definite contraindications to vaccine therapy.

It might be well to emphasize that a child with eczema should not be vaccinated for the prevention of smallpox, or even remain in the same household with anyone recently vaccinated.

The search for a better understanding of the constitutional background and mechanism of allergy and for means of correction continues. Meanwhile elimination and hyposensitization constitute the basic methods of management in allergy.

Central Medical Building
18th and Chestnut Sts.

REFERENCES

1. Rowe, A. H.: Elimination diets and the patient's allergies. Ed. 2. Lea & Febiger, Philadelphia, 1944.
2. Cooke, R. A.: Allergy in theory and practice. W. B. Saunders Co., Philadelphia, 1947.
3. Urbach, E., and Gottlieb, P. M.: Allergy. Grune & Stratton, New York, 1943.

# Gastrointestinal Allergies in Pediatrics*

NELSON D. KING, D.O.
Boston, Mass.

The osteopathic pediatrician holds a unique position in the field of gastrointestinal allergies. To him falls the advantage of dealing with the newborn before the first manifestations of allergy. This should afford an opportunity for the prevention and alleviation of allergic manifestations.

Allergy has been defined as an altered reactivity of tissue following the introduction of some foreign protein. This paper deals with such proteins introduced via the gastrointestinal tract in two groups: (1) infants and (2) older children.

The gastrointestinal allergies of infancy are more common than those of the older child. The factor of food allergy is most important in the earliest period of life. At this time foreign proteins may be absorbed in unchanged form very easily. Contact between massive and repeated doses of allergic substances and the cellular antibody of the gastrointestinal tract results in general and segmental enterospasm known as colic. It is so common as to be considered almost physiologic. The colic is so persistent sometimes that even sedatives are insufficient to control it. Food may be regularly and forcefully expelled from the stomach and frequent loose stools with mucus and blood may occur. Lymph-borne allergens may react with sensitized cells of the corium causing infantile eczema. Unless the condition of so-called colic is understood and food is changed and properly controlled, the infant will go through long periods of illness and discomfort.

The usual early picture is of an infant of about 3 weeks of age with colic that is getting worse, hunger, too much weight gain, loose stools with mucus and blood, and visible peristaltic waves. In the newborn when milk is the only food, it can be considered as the allergen. There are, however, two proteins that may be the allergic factor, casein and lactalbumin. Casein is the same in breast milk, whole milk, evaporated milk, or goat's milk. The lactalbumin varies.

A shift to evaporated milk which has a denatured lactalbumin or goat's milk which has a different lactalbumin may cure the allergy if only this allergen is at fault. If the allergy is due to casein, milk in all forms will have to be removed from the diet. Mull-Soy or Nutramigen may be substituted. These emulsions of soy flour and other food factors allow an infant good nutrition without milk consumption. Often upon the removal of cow's milk the bloody mucoid diarrhea and colic will be gone in 48 hours. I usually put these infants on goat's milk first, using the evaporated form, and preparing the formula without using corn syrup, which may also be a factor in some allergies. The use of Dexin or Allerdex for a sugar modifier seems to be best.

Often two or more formulas with different sugars are given so that rotation can be accomplished. The infant is then not kept on any formula for more than 2 days, which has the effect of reducing contact with any factor for a long period. Atropine sulfate, 1/1000 gram, and phenobarbital, ⅛ gram, may be used to allay the enterospasm. The antihistamines, in my experience, have not been indicated in early gastrointestinal allergies.

The basic foods in infant feeding for many months are milk, wheat, orange juice, fish oil and egg. It is interesting to note that allergists have found that these five basic foods are also the most common sources of allergic manifestations in infants and children. A large number of infants are potentially allergic by reason of heredity. A good family history will reveal some allergic manifestation in the mother, father, or a sibling. One report showed that 80 per cent of patients with gastrointestinal colic had an allergic background. An infant with an allergic history should be given the five basic foods, with their potent allergens, in as denatured a form as possible or should not be given them at all.

To prove the existence of gastrointestinal allergy is difficult sometimes, especially the milder forms. It is known that eosinophils in the mucus of the stool are a good indication of gastrointestinal allergy; the relation to allergy is not known. Stool eosinophilia is not present with an acute allergy and is not seen in serum sickness; it seems to denote chronicity. Nance[1] has described an easy way of staining the stool, which I have been using and find very helpful in the differential diagnosis of colicky pain. The method is as follows:

1. A stool specimen is obtained by finger cot.
2. The mucus is picked out and placed on a slide.
3. A cover slip is applied and cells looked for.
4. A smear is made by gliding off the cover slip,
5. Fixed with heat, and
6. Stained with Wright's stain while still hot. It is diluted immediately with buffer solution,
7. Stained until the greenish film appears on the surface, then
8. Washed, dried over flame, and examined under cedar oil.

In the newborn the symptoms of enterospasm and vomiting may also be caused by pyloric stenosis, pylorospasm, or some congenital gastrointestinal anomaly.

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 1, 1949.

These conditions must be kept in mind while making the differential diagnosis.

Milk may not be the causative factor in gastrointestinal allergy, even in the newborn. If orange juice is taken, it too must be excluded as a cause. The substitution for orange juice of ascorbic acid in tablet or drops should be tried: A minimum of 50 mg. a day should be provided. Also the fish oils must be excluded. The synthetic water-soluble vitamin products such as Vi-Penta or Vi-Syneral should be used. As basic foods are added to the diet, great care must be taken, especially with cereals. Foods such as Pablum contain wheat, corn, barley, alfalfa, and other possible allergens. Allergy to such a food is confusing because so many allergens are present. Using cream of rice to start is better since rice is considered to be the least common allergen offender.

In the child who is past infancy the problem of intestinal allergy can be very serious. It is still a matter of enterospasm, but along with it there is edema which may involve the tongue and palate as well as the intestinal walls. Edema has been seen in colostomy wounds and also in the rectal mucosa by proctoscope. Such cases can be very confusing in diagnosis unless the possibility of allergy is kept in mind.

Food reactions may cause abdominal pain with or without nausea, diarrhea, or, in severe cases, vomiting of extreme nature. Two cases illustrate this problem. A female, aged 7, complained of recurrent abdominal pain and occasional slight fever. Her leukocyte count was 12,600, and diagnosis of appendicitis was made. Surgery was performed. The appendix was found to be edematous but not infected. Two months later she was still complaining of her old pain. She had swelling and redness of her knee joints and painful finger joints and a slight fever. Blood sedimentation rate was 20 mm. per hour and the leukocyte count was 13,000. A diagnosis of rheumatic fever was made. The electrocardiogram was normal. Bed rest was ordered. Nasal congestion was very troublesome. Two months later she had blood eosinophilia, 12 per cent, and nasal mucus eosinophilia. A diagnosis of allergy was made and Benadryl, 25 mg. every 4 hours, was given. For 3 months she has had no complaint. The question arises as to whether she was suffering from allergic phenomena from the beginning. I believe that she was.

The other case was that of a 9-year old girl complaining of abdominal cramps. The pain came on about twice a day, usually following a meal. Upon consultation it was diagnosed as appendicitis. Her leukocyte count was 7,000, her temperature was normal, and slight hypochromic anemia was present. Bed rest was ordered but it brought no relief. After 6 weeks the family became impatient and called another physician. Allergy was suspected and Benadryl, 25 mg. every 4 hours, was ordered. There was no pain after 12 hours and there has been none since. I believe the case to have been one of allergy.

It can be seen that gastrointestinal allergy in older children can simulate a surgical condition; therefore, careful investigation is necessary. Mucous colitis with eosinophilia is seen in older children with mild chronic allergy. Canker sores are thought by many to be caused by intestinal allergy. Another allergic manifestation in the older child is Henoch's purpura. In 1939[2] and again in 1945[3] I reported cases of this type of allergy with a review of the literature. Then it was suspected that Henoch's purpura was due to intestinal allergy and now that is known to be true. Henoch's purpura is characterized by colic, blood in stools, hematuria, and sore, red joints, with spotty purpura around the joints or on other areas of the body.

Although most allergic children are sensitive to food, it is rare to find one who is sensitive to food alone. Food allergens most likely to cause difficulty in the older child are wheat, egg, milk, sugars, vegetables, antirachitic oils, and vitamin C foods (oranges and tomatoes). In managing these cases care should be taken not to exclude important foods too long.

Cutaneous testing may be started at 3 to 4 months of age. I use intracutaneous testing exclusively, starting with group tests. Care must be exercised and epinephrin solution held ready in case of severe reactions.

In older children skin tests for many foods may be positive while the real factors are pollens. I have noted time and again this factor of pollens in cases of gastrointestinal allergy. It appears that there is some connection in the sensitization process between early food allergy and late pollen allergy. Hill,[4] at the Children's Hospital in Boston, proved that some cases thought to be pure food allergy were actually allergy to the pollens of birch and other trees.

## CONCLUSION

It was stated in the beginning of this paper that as osteopathic pediatricians we hold a unique position in the field of gastrointestinal allergy. We see and handle allergic infants early and treat their various spinal lesions. We normalize every body function within our grasp and we know that time and time again the allergic phenomenon has been altered by osteopathic manipulative therapy alone.

Experience has taught the importance of the five major food allergens. In infants and children, an understanding of the mechanisms of allergy is most important in making a correct diagnosis. Therapy is based on the removal of the offending allergen, after identifying it by elimination or skin testing. Clinical test with antihistamines is indicated as well as the use of antispasmodics and sedation. Osteopathic manipulative therapy to the lesioned areas of autonomic nervous control is most helpful in prophylaxis and therapy of gastrointestinal allergies.

350 Commonwealth Ave.

## REFERENCES

1. Nance, F. D.: Stool eosinophilia in gastrointestinal allergy of infancy. J. Pediat. 33:313-317, Sept. 1948.

2. King, N. D.: Schönlein-Henoch's purpura, with report of case. J. Am. Osteop. A. 38:403-404, April 1939.

3. King, N. D.: Henoch's purpura, with report of case. J. Am. Osteop. A. 44:369-370, April 1945.

4. Hill, L. W.: Food sensitivity in 100 asthmatic children. New England J. Med. 238:657-659, May 6, 1948.

# Respiratory Allergies*

LEO C. WAGNER, D.O., M.Sc.

Philadelphia

The first manifestation of allergy to occur in human beings is an urticarial rash seen shortly after birth. It is usually so mild and so fleeting that it attracts little attention. The next allergic evidences to appear are pylorospasm, enterospasm (colic), regurgitation, diarrhea, and atopic dermatitis (eczema). However, the discussion in this paper will be limited to the manifestations of respiratory allergy in the older child, the 2- to 5-year group and the 8- to 12-year group, and more specifically to the former, since as children grow older their allergic symptoms take more the form of typical asthma. They seem to develop some degree of street immunity and their allergy is less frequently complicated by severe infection and instead begins to assume the severe resistant type of asthma of the adult. It is, therefore, evident that the treatment or rather the prevention of asthma in the adult requires the intelligent and competent handling of allergy in the early years of childhood.

The typical attack of asthma, ushered in abruptly with dyspnea, sibilant rales, cough, but without fever or upper respiratory infection, and which responds promptly to injection of epinephrin is not commonly seen in the 2- to 5-year group. More commonly, children of this age are seen running a fever up to 103 F. or higher; they are dyspneic, cough incessantly, and have sibilant rales scattered throughout the chest; there is a thick purulent nasal discharge; the throat is red; and the cervical nodes are definitely enlarged. The diagnosis usually is "asthmatic bronchitis." Epinephrin by injection or inhalation is of no value because the pathology is different from that of the true asthmatic attack. The dyspnea and rales of the latter are the result of spasms of the bronchioles which are promptly relieved by epinephrin, whereas the dyspnea, wheezing, and cough of the child with "asthmatic bronchitis" are due to inflammation and edema of the bronchioles and endobronchial obstruction due to tenacious and inspissated mucus. Since infection plays an important role in the etiology of these attacks, the therapeutic approach must be different. Methods to combat the infection, possibly including the sulfonamides or antibiotics; means to liquefy the tenacious bronchial secretions; and, of course, osteopathic manipulative therapy should be used.

The manifestations described above are sufficiently dramatic in nature to make any alert physician aware of their allergic background. However, there is a much less dramatic manifestation which should arouse suspicion of respiratory allergy. An excessive number of "head colds" is reason for children to have a thorough appraisal. The history will invariably bring out that these children sneeze and cough every morning from the time they awaken until they are dressed or they are "chronic coughers" who start to cough every night as soon as they put their heads on their pillows. Ultimately, signs and symptoms of seasonal allergy appear in their histories.

Treatment of the acute attack, which is so important in the minds of the parents, is only a small part of the problem of the allergic child. The first important step is to take a detailed diary-like history which can not always be obtained at the first interview. The parents must be urged to recall every detail of the attacks. When, where, and how did the first attack occur? Are the attacks always associated with an upper respiratory infection? Emotional upset? Dietary indiscretions? Contact with animals, toys, or clothing? The history should be gone over with parents from time to time. It is surprising how often parents will later recall facts which are at first forgotten and which many times have an important bearing on the case.

Next in importance is the physical examination. A complete examination is of utmost importance and should be repeated at least at monthly intervals.

The third step of study involves laboratory tests. Complete skin testing with all foods and inhalants, particularly house dust, should be carried out. Certainly, a complete blood count is necessary; low hemoglobin and/or anemia will aggravate the existing oxygen lack; the white blood count and differential count are significant. It should be borne in mind that the eosinophils often are higher after an acute attack than during its height, when they may leave the blood stream to become fixed in the shock organ—the lung.[1]

A diagnosis of asthma should never be made without chest x-rays, anteroposterior and lateral views, to rule out such pathology as pulmonary tuberculosis, bronchiectasis, lymphadenopathy at the bifurcation of the trachea, tracheal compression from within or without, cystic fibrosis of pancreas, mediastinal tumor or retropharyngeal abscess. The nasal sinuses should also be x-rayed to determine the absence or presence of involvement of these areas. The x-ray study should include a lateral view of the nasopharyngeal area for detection of hypertrophied lymphoid tissue.

Crowe and his associates[2,3] found that more than 75 per cent of children who underwent adenotonsillectomy had postoperative recurrence of a marked degree of adenoid tissue in the nasopharynx, not because of poor surgery but because lymphoid tissue in the throat reacts to infection by increasing in size and spreading to areas of mucous membranes normally free from it.

Studies of nasal smears for eosinophils should never be omitted at periodic examinations. Repeated smears that fail to show eosinophils should cast doubt on a diagnosis of allergy.

Last, but not least in importance, is the psychological appraisal of the child. This phase can not be overlooked if treatment of the allergic child is to be successful. Bakwin and Bakwin[4] in a recent report on this phase of allergy in children have shown the role played by the dominating or over-indulgent mother. They have pointed out the association between emotional upsets and attacks of asthma and warned of the danger of children's using allergic disease as a defense in difficult situations.

The allergic child must not be permitted to develop a sense of inferiority. While he may not be able to participate in such sports as football, his sense of importance and superiority can be encouraged by having him taught music; drawing; photography;

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 1, 1949.

stamp, coin or mineral collecting; or model airplane building. Care, of course, should be taken that hobbies are avoided that conflict with his allergic tendencies—taxidermy, for example. The psychological factors involved in asthma in children are important and must be taken into consideration if maximum results are to be achieved in treatment.

Treatment of the allergic child must be divided into two main divisions: treatment of the acute attack and treatment between acute attacks.

For the typical attack of asthma—that form that is ushered in abruptly with dyspnea, sibilant rales, cough but without fever or signs of upper respiratory infection—the effectiveness of hypodermic injections of epinephrin (1:1000) is well known. Oral administration is valueless and there is little justification for large doses.[5] Smaller doses repeated at more frequent intervals are much more effective than a single large dose. Children between the ages of 2 and 5 years will be benefited by 0.1 to 0.2 cc. and those from 5 to 10 years by 0.3 to 0.5 cc. It is rarely necessary to exceed these doses. If they fail to relieve the attack, they may be repeated in 15 to 30 minutes.

Epinephrin in oil (1:500) is uncertain in its action, not prompt enough for immediate effect, and produces too much local reaction. Aerosol epinephrin (1:100) used with a glass nebulizer is effective but its ease of application may result in injudicious and unnecessarily frequent use, producing unpleasant side reactions such as dryness of the pharyngeal mucosa, tachycardia, tremors, nausea, and gastric distress. Epinephrin (1:1000) intravenously is dangerous and should not be so used in children.

Aminophylline is an effective bronchodilator and is of great value in the acute attack of asthma. For immediate relief it should be given intravenously in a dose 6.5 mg. (0.1 grain) per kilogram of body weight in 10 to 20 cc. saline solution and injected very slowly. Doses larger than 0.25 gram are seldom indicated in children at any age. Aminophylline is available commercially in two sizes of ampules—0.25 gram and 0.5 gram in 10 and 20 cc. saline respectively. It may be given rectally if sustained results are desired. A 0.25 gram suppository may be used in older children and the same size suppository may be split lengthwise for very small children.

Atropine sulfate is generally contraindicated in asthma. Because of its drying effect upon mucous membranes, it causes thick tenacious mucus.

Antihistamine preparations (Benadryl, Pyribenzamine, et cetera) have not been generally accepted as of value. Most authorities feel they are of little value in the nonseasonal type of asthma.[6-11]

Oxygen inhalations are indicated in cases showing persistent bronchial constriction. It should be administered in 50 to 70 per cent concentration. Care should be taken to see that it is humidified because of its drying effect on the bronchial mucosa.

While the effects of epinephrin and other autonomic drugs are quite spectacular in typical asthmatic attacks, they are of little value in the treatment of the child suffering from "asthmatic bronchitis." This child with his respiratory distress, cough, fever, cervical adenopathy, stopped-up nose, and inflamed throat is suffering not from endobronchial spasm but endobronchial edema and obstruction from thick tenacious mucus. Treatment, therefore, must be directed towards overcoming infection by the use of antibiotics or sulfonamides and measures for facilitating the movement of the bronchial secretions by maintaining the cough reflex and thinning the thickened mucus. One of the most important agents for this purpose is water, inhaled or ingested. Hence, inhalations of steam are extremely important in treatment. The use of emetics is contraindicated because it increases the loss of fluids and interferes with the proper intake of fluids.

Atropine and the antihistamine drugs should not be used because their drying action increases the viscosity of the bronchial mucus. Morphine is contraindicated because it interferes with the cough reflex. However, there are times when the cough is very distressing and greatly interferes with rest and seriously handicaps the child. In these instances, a mild opiate may be used temporarily. It should be prescribed separately and for only one or two doses and not combined in a cough mixture. If any medication is prescribed, it should be potassium iodide in the saturated solution, administered three times daily, 5 drops at 2 years of age and 25 drops at 8 to 10 years of age. It aids in decreasing the viscosity of the mucus making it more freely movable and easier to expel.

Osteopathic manipulative therapy directed toward thoroughly relaxing the cervical and dorsal areas of the spine and thoroughly mobilizing each area, and a five minute "lymphatic pump" treatment should never be omitted in the acute phases of allergy.

Some drugs are useful in the treatment of the allergic child but their usefulness is limited. They are of secondary and not primary importance as some physicians so often seem to consider them. The habitual use of medication without an attack upon the central etiologic factor is poorly conceived management of an allergic child.

The most important part of the treatment of these children is the handling of the case between the acute attacks. They should be thoroughly skin tested for all pollens, food, contactants, and house dust. A hyposensitization regime should be instituted against all positive reactors and all offending foods should be removed from the dietary.

Since most allergic children are sensitive to house dust regardless of their skin reactions, the elimination of house dust becomes an important factor and the starting point is the child's bedroom. When one realizes that a child spends approximately 12 hours a day in his bedroom, its importance becomes apparent. Of the remaining 12 hours, 5 are spent in school, a place where there is no house dust. There are no rugs, no kapok, no cotton linters, no cats or dogs, no rug pads, no mohair (goat hair). There may be lots of dirt, sand, and wood splinters, but no house dust. Another 4 or 5 hours of the remaining 7 are spent outdoors and, of course, there is no house dust there. This leaves the child only a few hours in rooms, aside from his bedroom, that are sources of house dust. Hence, it becomes apparent why the child's bedroom should receive so much attention. There should be no rugs or rug pads on the floor; instead, washable cotton bathroom-type mats may be used. There should be no drapes. Venetian blinds are contraindicated because they are dust catchers; each individual slat acts as a shelf on which dust collects. No woolen blankets should be used; instead, blankets insulated with glass fiber are recommended. The mattress and box springs should be covered with zipper-closed heavy encasings. The pillow should be made of glass fiber or sponge rubber. Toys should be restricted to rubber, metal, or wooden ones, with fuzzy, furry, and kapok-stuffed

playthings eliminated. Under no circumstances is the child allowed to have a dog or cat regardless of the results of his skin reaction to testing. The allergic child may have such pets as goldfish, turtles and snakes.

The child should never get out of bed onto a cold floor with his feet bare nor should he walk around barefooted. Outside he should wear rubbers on damp, wet, and cold days. He must wear a head covering as well as a leg covering on cold days. He should avoid strong odors such as those of fresh paint, gasoline, kerosene, moth balls, cleaning fluids, tobacco smoke, strong perfumes, and flowers.

A careful search for lymphoid tissue by x-ray or nasopharyngoscope should be made at least every 6 months. If such tissue is found, it should be treated by x-ray or radium as indicated. Ward,[12] in 1943, made a report on a group of asthmatic children in whom nasopharyngoscopic examination revealed hypertrophied adenoids and lymphoid tissue throughout the pharynx. In most of these children the attacks of asthma were preceded by coryza. Following radiation therapy, the frequency and severity of the attacks were reduced in many cases and in some instances the asthmatic attacks were eliminated.

The nasal sinuses should be investigated by x-ray and if found to be diseased, should be treated by roentgen rays.

The children should receive weekly osteopathic manipulative treatment, at which time the entire spinal area should be thoroughly relaxed with correction of all vertebral and rib lesions. Also, a 3- to 5-minute "lymphatic pump" treatment should be given.

It should be unnecessary to mention that these children should receive their proper vitamin complements daily and that any existing anemia should be properly treated.

It is of utmost importance that these children be properly immunized against pertussis, diphtheria, and tetanus. Pertussis produces serious lung damage in an allergic child. Present-day toxoids will not cause any more reaction in the allergic than in the nonallergic child. However, it is dangerous to give antitoxins to an allergic child, and hence he should receive yearly booster or recall injections, in order to avoid the necessity of antitoxin.

SUMMARY

The management of the allergic child has been discussed. The importance of therapeutic, prophylactic, and environmental control has been emphasized. The detail and thoroughness necessary in the care of these cases is apparent.

1813 Pine St.

REFERENCES

1. Smyth, F. S.: Round table discussion: Asthma in children. Pediatrics 2:119-120, July 1948.
2. Crowe, S. J., and Guild, S. R.: Impaired hearing for high tones. Acta otolaryng. 26:138-143, 1938.
3. Crowe, S. J., and Baylor, J. W.: Prevention of deafness. J. Am. M. A. 112:585-590, Feb. 18, 1939.
4. Bakwin, R. M., and Bakwin, H.: Psychologic aspects of pediatrics. J. Pediat. 32:320-323, March 1948.
5. Poncher, H. G.: Round table discussion: Asthma in children. Pediatrics 2:120-122, July 1948.
6. *Ibid.*, pp. 122-124.
7. Logan, G. B.: Management of allergic disease of respiratory tract in children. Pennsylvania M. J. 51:739-746, April 1948.
8. Thienes, C. H.: Pharmacology of new drugs useful in pediatric practice. California Med. 67:90-94, Aug. 1947.
9. Arbesman, C. E.: Pharmacology, physiology, and clinical evaluation of new antihistaminic drugs (pyribenzamine and benadryl). New York State J. Med. 47:1775-1781, Aug. 15, 1947.
10. Tuft, L.: Newer antihistaminic drugs in treatment of allergic states. Am. Prac. 2:1-5, Sept. 1947.
11. Ratner, B.: Evaluation of benadryl, pyribenzamine, and other so-called antihistaminic drugs in treatment of allergy. J. Pediat. 30:583-602, May 1947.
12. Ward, A. T., Jr., Livingston, S., and Moffat, D. A.: Asthma in children, treatment with radium nasopharyngeal applicator. J. Am. M. A. 133:1060-1062, April 12, 1947.

# Allergic Skin Lesions in Pediatrics*

WALTER L. WILLIS, D.O.
Conshohocken, Pa.

The commoner forms of allergic response made manifest in the skin include contact dermatitis, urticaria, atopic eczema, and miscellaneous dermatologic eruptions such as generalized or localized erythemas, drug eruptions, and infectious exanthemas. Allergic toxic erythema, allergic urticaria, and infantile eczema and their treatment have been chosen for discussion in this paper.

## ALLERGIC TOXIC ERYTHEMA

Allergic toxic erythema is classified with the symptomatic erythemas, which include congestive disorders of the skin that develop as a result of systemic disease or some derangement of the general economy. Erythema in general is due to vasodilatation and it exists as a temporary phenomenon of vascular activity, such as blushing, as a permanent change in the vessels, such as port wine angiomas, or as a persisting symptom of vascular intoxication.

Allergic toxic erythema is one of the mildest eruptive erythemas and is caused by foods, drugs, infections and their toxins, and contact irritants. The eruption is variable in amount and distribution since it can exist as a localized patch or a generalized covering; in the latter case it is usually symmetrical and of internal origin. It is of short duration. The skin presents little more than a vascular color change because there is no itching as a rule, although there may be a sensation of warmth. The color disappears with pressure and returns when pressure is released. There is seldom any scaling and on regression the erythema usually leaves no trace.

The clinical diagnosis is made primarily by diascopy, a not too definite history, a negative physical examination, and the presence of a simple erythema, pink to dark red in color.

Allergic toxic erythema should not be confused with the more complex erythemas. The erythematous eruptions with elevated, pruritic, edematous wheals characteristic of urticaria are confusing. An erythematous papular eruption, with history of idiosyncrasy to drug or medication, should arouse suspicion of dermatitis medicamentosa. An erythematous vesicular eruption, with edema, pruritis, and a history of sensitivity to a contact irritant should involve consideration of contact dermatitis.

The erythemas symptomatic of systemic disease, e. g.: rose spots in typhoid fever; the roseola of early syphilis; rashes in diphtheria, meningitis, infectious mononucleosis and the avitaminic state are the

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 1, 1949.

cause of considerable difficulty in differential diagnosis. Erythema multiforme with its multiplicity of lesions and characteristic symmetrical distribution of nonpruritic reddish papules, macules, and vesicles and the painful nodular eruption of erythema nodosum need to be mentioned for purposes of comparison. These lesions are not characterized solely by erythema and are hence more specifically named.

Allergic toxic erythema involves no problem in treatment. It is short-lived and will usually disappear spontaneously in a few days, particularly following saline catharsis in the older child and enemata in the younger.

### ALLERGIC URTICARIA AND ANGIONEUROTIC EDEMA

Urticaria is an inflammatory affection, characterized by the eruption of white, pink, or red wheals caused by the transudation of fluid from vessels into the tissue spaces. The lesions burn, itch, and sting. Wheals vary greatly in size and shape; they occur from pinhead to giant sizes and may take forms that are papular or macular. They may be found in large patches, as seen in angioneurotic edema, or in streaks. Any or all parts of the body may be affected, but the usual sites are lower trunk, outer thighs, and buttocks—primarily the covered parts. Rubbing usually renders the lesions worse instead of better.

Acute urticaria is the most common type and usually lasts 3 or 4 days. During this time crops of new lesions are constantly appearing after older ones have subsided. The eruption may then subside permanently or it may recur. Chronic urticaria consists simply of repeated attacks of acute urticaria over a period of months or years. Angioneurotic edema is a form of urticaria producing giant wheals. The lesions differ from urticaria only in size. The large lesions are usually more persistent than those seen in urticaria. The regions most commonly affected are the lips, eyelids, and lobes of the ears.

Urticaria usually refers to the more generalized eruptions of wheals of internal origin. While most of the eruptions are allergic, some are toxic, and change of temperature, disturbances of the endocrine glands, and diseases of the nervous system may also have a causative relationship.

Of the allergic causes, specific foodstuffs are common in acute urticaria. The attacks generally are transitory. Serum sickness, certain inhalants, products of bacteria and fungi, and focal infections are other causes of allergic nature. Certain drugs may produce urticaria through specific sensitization, other drugs, through toxic action. In chronic urticaria food is seldom an offender, but focal infections are frequent offenders. The commonest offending foods in urticaria include fish, eggs, meats, raw fruit, tomatoes, nuts, candy and cocoa. Frequently offending drugs are sulfonamides and laxatives containing phenolphthalein.

In the treatment of allergic urticaria, whether chronic or acute, all of the etiological factors must be considered carefully. A saline laxative is helpful. Food allergens may be detected by elimination diets, preferably using the effective method devised by Winston and Sutton[1] which consists of the simple addition of a single food to the diet and waiting until the next meal to see if it causes urticaria. A food that is tested and does not cause urticaria may then be eaten at any time. When urticaria follows the eating of a food it is tentatively considered an allergen and is not eaten for 1 week. If urticaria follows a food that is retested, it is considered an allergen and is eliminated. In all cases antiallergic drugs should be instituted concomitantly with other treatment.

Local applications containing antipruritics are considered of value. One typical and effective palliative is:

| | |
|---|---|
| Carbolic acid | 20 grains |
| Camphor | 1 grain |
| Menthol | 1 grain |
| Glycerin | 1 dram |
| Zinc Oxide | 6 drams |
| Aqua hamamelidis, Aqua calcis, each in sufficient quantity to make | 8 ounces |

Saturated aqueous solutions of sodium bicarbonate, starch, or borax are soothing. Medicated soaps, woolen garments, and irritating local applications are to be avoided. In children the administration of aspirin is particularly helpful to relieve fatigue and irritability.

When urticaria is produced by penicillin, the administration should be stopped immediately unless the need for it is immediate and critical. Antihistaminic agents should be administered by mouth. If urticaria and associated symptoms subside, a test dose of 1,000 units of another brand of penicillin may be injected intramuscularly, provided facilities for administration of epinephrin are at hand to combat possible reactions. If there is no reaction to the test dose within 6 hours, another dose of 10,000 or 20,000 units is given. If no further reaction occurs, administrations of therapeutic quantities of penicillin may be resumed, with continued use of the antihistaminic compound. The dose of the antihistaminic is gradually reduced for the next 3 days. If urticaria recurs the dose is increased to the level first used.

Compounds which produce high levels of penicillin in the blood such as penicillin in oil and wax; or aluminum stearate and penicillin S-R, are contraindicated in patients with allergic manifestations because rapid excretion of penicillin is desirable. If reactions recur despite the above regime and penicillin is important, as in syphilis, another attempt at administration should be made a month or two after the first with close observation of the patient. Some patients with penicillin urticaria "spontaneously" lose their hypersensitivity after being left unexposed to the drug for a period of weeks or months; others may lose their hypersensitivity despite continued administration; and still others can be given penicillin as long as one of the antihistaminic drugs is given at the same time.

The treatment of chronic urticaria presents the greatest problem. Since foodstuffs do not play an important role in the chronic cases, a diligent search for focal infections is necessary. Intravenous injections of calcium gluconate seem to be quite helpful in relieving itching in the majority of these sufferers. What part this agent plays in the desensitization process, if any, is a controversial matter. Autohemotherapy is a commonly practiced procedure. The patient is given 10 cc. of his own blood intramuscularly once or twice weekly.

### ALLERGIC ATOPIC ECZEMA

Atopic eczema does not usually develop in infants until the third month and more frequently not until they begin teething. The eruption is characterized by minute vesicopapular or vesicopustular lesions, either discrete

or coalescing into large patches, and associated with erythema, edema, and pruritis. Oozing and crusting develop after excoriation of the lesions, with thickening, cracking, and scaling later. Exacerbations occur once or twice weekly. In the intervals dryness, scaling and thickening often persist. Areas of predilection to this dermatitis are the face and neck, wrists, antecubital fossae, and poplitial spaces, and in infants the scalp.

Food allergy is one of the outstanding causes of atopic eczema. Seasonal exacerbations of the eruption may be explained by atopic allergy to pollen or by ingestion of or contact with seasonal foods. Family or personal histories of perennial or winter eczema, particularly in infancy, dietary idiosyncrasies, intestinal and respiratory allergy, urticaria, and migraine favor the diagnosis of atopic eczema. Exacerbations of infantile eczema may be caused by heat or cold, perspiration, ingestion of foods or drugs, wool clothing, intercurrent infections, and improper local treatment.

The diagnosis of atopic eczema is usually easy, particularly where there is a family or personal history of atopic disease. It must, however, be differentiated from seborrheic dermatitis. Seborrheic dermatitis is usually a sharply circumscribed erythematous and superficial dermatitis. Scales are greasy and itching is slight.

In treatment, the temperature of the baby's room should be kept at 68 F. Smooth cotton and linen rather than woolen materials should be used next to the skin. Soap should not be used for cleansing. Detergents have been quite helpful. The child should be bathed with tepid water to which starch or sodium bicarbonate has been added.

The elimination of possible allergens is of primary importance in the diet. In children under 2 years of age the approach is not difficult. In order of frequency, cow's milk, wheat, eggs, citrus fruit, spinach, peas, tomatoes, fish and fish products, are the usual dietary allergens producing atopic eczema. One of the most striking facts about infantile eczema is the potent effect of environment. In a great number of infants the eczema improves and occasionally clears up entirely upon hospitalization. The child should be protected from house dust, feather pillows, mattresses, and wool or silk bedding.

Antiallergic drugs should be instituted. Antiallergic drugs incorporated in ointments have not proved too successful.

In my own practice local therapy in the acute wet dermatoses has been particularly successful, both for drying and antipruritic effect, with the use of an oil emulsion containing:

| | |
|---|---|
| Carbolic acid | 15 grains |
| Camphor | 2 grains |
| Menthol | 2 grains |
| Glycerin | 1 dram |
| Zinc oxide | 6 drams |
| Tragacanth powder | 15 grains |
| Olive oil, | |
| Aqua calcis, each in sufficient quantity to make | 6 ounces |

In the dry scaling types good results have been obtained by the use of tars and salicylic acid despite the constant warning against salicylic acid in some eczematous eruptions. A typical prescription might contain the following:

| | |
|---|---|
| Crude coal tar | 20 grains |
| Salicylic acid | 10 grains |
| Zinc oxide ointment, | |
| Petrolatum, each in sufficient quantity to make | 2 ounces |

Parents should be warned in the use of this ointment. It should be applied sparingly and the excess wiped off with a soft tissue since this ointment has a tendency to stain both skin and clothing.

Recently a great deal has been written on blood protein depletion in infantile eczema, deficiency being attributed to food intake because of elimination diets or failure of complete absorption. It might be well to give this theory consideration in the treatment of hospitalized patients with severe atopic eczema.

Routine prophylactic treatment for diphtheria, pertussis, and tetanus should be given the allergic child. There are usually no disagreeable reactions other than those found in normal children. It is important that the allergic child be immunized against diphtheria and tetanus so that he will never need the corresponding antitoxins. Hypoimmunization against pertussis is important because respiratory allergies are likely to develop. Children with allergic atopic eczema should not be vaccinated against smallpox until the skin is perfectly clear, because of the danger of inoculation in scratched areas.[2]

SUMMARY

Allergic toxic erythema, allergic urticaria, and allergic atopic eczema are three easily diagnosed dermatoses commonly seen in pediatric practice. The diagnosis in many instances is easier than the management of treatment. Detection and elimination of the allergen; the use of antiallergic drugs; and simple, palliative, topical treatment will make the allergic skin problem a little easier.

103 E. Fifth Ave.

REFERENCES

1. Winston, B. H., and Sutton, R. L., Jr.: Urticaria; detection of ingested allergens; the single food additive diet. Practitioner 160:347-352, May 1948.

2. Glaser, J.: Treatment of eczema (atopic dermatitis) in infancy. J. Am. M. A. 137:527-531, June 5, 1948.

## VARIABILITY OF POLIOMYELITIS

Poliomyelitis is in many ways an unpredictable disease. The attack rate varies widely over the country in any given year, and there is no apparent geographic pattern in the areas affected in successive years. Furthermore there is considerable variation in the time of the year when the disease reaches its peak incidence, although outbreaks of poliomyelitis usually occur in the summer and early fall.—*Statistical Bulletin*, Metropolitan Life Insurance Company, February, 1950.

Journal A.O.A.
Vol. 49, No. 9

# Psychologic Problem of the Allergic Child*

CECIL HARRIS, D.O.
Philadelphia

It is generally admitted that there is a high incidence of neurosis in allergic children. Many manifestations among these patients have been observed which cannot be explained on the basis of increased or decreased exposure to allergic substances.

Everyone is familiar with the experiment performed many years ago in which an attack of hay fever was produced by means of artificial roses. Many of the apparent benefits of change of climate in asthma are due to psychologic factors.

Dunbar[1] has observed that in certain cases of asthma the signs and symptoms disappeared while the patient was under the influence of Sodium Amytal and that discussion of the problem which caused the emotional conflict made the signs and symptoms reappear. Weiss and English[2] state that emotional factors are just as important as allergic factors in the etiology of vasomotor rhinitis.

Any physician who is interested in allergic diseases of children soon recognizes the fact that the emotions play an important part in the causation of these diseases and that often a permanent "cure" is impossible without psychiatric treatment.

It is important therefore that particular attention be paid to the personality of the allergic child to see whether psychic factors can be found that are fundamentally important in the background of the illness or in precipitating attacks. A relatively constant personality type appears to be characteristic of these patients. They often are overanxious and insecure, lack self-confidence, have above average intelligence, and are irritable, aggressive, and quick to respond.

An idea, a fear, or a "feeling" can set off an attack of allergy as well as a toxin, a bit of pollen, or a whiff of horse dander. The modern allergist is well aware that, regardless of skin tests, removal of the allergen does not always result in the relief of symptoms and that often relief of symptoms occurs without removal of the allergens.

Despite the search for specific organic causes of bronchial asthma a large proportion of cases still remains etiologically unclassifiable. These are grouped under the term "intrinsic asthma" and the emotionally disturbed are thought to make up a large part of this group. Various authors classify asthma as a respiratory neurosis, a reflex neurosis, or a central neurosis, indicating the tremendous role of the nonallergic forces.

Hippocrates[3] said the asthmatic must guard against anger. The neurotic factors in asthma, therefore, have long been noted and they are by no means excluded by the present-day concept of asthma as an allergic disease. The emotional and allergic factors seem rather to complement each other. Sadler[4] feels that the chief etiological factor in two-thirds of the asthmatic conditions is mental or emotional.

Asthmatic children are notoriously overprotected by their parents, especially by the mother. This emotional attachment may be as incapacitating as an unsevered umbilical cord. The asthmatic attack signifies a reaction to the separation from the mother. It replaces a repressed cry at the threatened loss of the mother's love.

The personality of the parents is usually one of overanxiousness and insecurity. These symptoms are often reflected in the patient who was very much wanted by the parents and overprotected or who was definitely unwanted by parents who have compensated for their unconscious hostility toward the child by overprotection.

It is often noted that the sufferer from asthma seems to be making the most of his attack by drawing attention to himself and consequently disturbing those around him.

Therapy is directed primarily toward encouraging greater independence in the child and a less inhibiting and overprotecting attitude in the parents. Hypnosis has been used successfully. It is believed to act by decreasing the excitability of the vegetative nervous system and thus the sensitivity to allergen. Psychoanalytic treatment is directed toward the rectification of the pregenital structure that underlies the symptom.

The psychological aspect of allergic skin diseases in children has been investigated among patients who had not responded to physical treatment.[5] The procedure included an interview with the parents and therapy was applied to both parents and patient. Domestic difficulties were carefully discussed.

Fenichel[6] observed that attacks of urticaria occurred in states of intense frustrated longing that could not find any other discharge. There was usually deprivation of parental love in childhood (more often maternal). Active treatment consisted of play technic with the aim of removing guilt feelings from the child. He was encouraged to live through his difficulties as expressed in play, paintings and phantasy.[7] While playing, it was noted that the patients did not scratch their skin lesions. If frustrated or upset, however, they began to scratch again.

Allergic skin reactions of early life may have a profound effect on the child's personality. The symptoms represent the child's reactions to an unfavorable environment and unless early treatment is instituted, the allergic reaction may become a fixed mechanism.

In the allergic dermatoses, the threshold of allergic response may be raised or lowered by the state of emotional tension in the child. He may react to an allergen at one time but not at another. One child was reported to have asthma and dermatitis due to the ingestion of fish. In a sanitarium, however, eating the same variety of fish failed to produce any reaction.

The psychological component in hay fever may be based upon a displacement of sexual curiosity from the visual to the olfactory sphere. The failure of parents to enlighten the child who is attempting to satisfy and master his sexual curiosity leads to this displacement and an increase in preoccupation with other bodily functions. The function most frequently involved is elimination which is known to be intimately associated with odors.

As a result of this psychosexual development, the substitution of olfactory for visual sexual curiosity, children may become more sensitive to pollens. Consequently, the local sensitivity to pollen and psycho-

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, New York City, April 1, 1949.

logical stimulation may be sufficient to precipitate an attack. When the chronic psychological stimulus is eliminated by psychoanalysis, the pollen irritation can no longer produce an attack.

On the other hand physical allergies affecting the cerebral cortex may produce personality changes. It has been observed that psychoneurotic disturbances in children such as restlessness, drowsiness, phobias, incorrigibility, outbursts of temper, nightmares, and similar symptoms may be the results of uncontrolled cerebral edema due to allergy. Correction of the underlying allergy to food or inhalants brings lasting results.[8]

It is now definitely known that physical and psychologic factors act in a complementary fashion to produce allergic disorders. The central emotion related to the allergic symptoms is a strong longing for love, basically directed toward the mother. When this longing is intensified or threatened with frustration, the allergic sensitivity is increased and the symptoms appear. Psychotherapy, therefore, plus a medical approach to the child's allergy will mean better treatment for the allergic disorder.

Central Medical Building
18th and Chestnut Sts.

REFERENCES

1. Dunbar, H. F.: Synopsis of psychosomatic diagnosis and treatment. C. V. Mosby Co., St. Louis, 1948, p. 77.
2. Weiss, E., and English, O. S.: Psychosomatic medicine. W. B. Saunders Co., Philadelphia, 1943, p. 408.
3. Kraines, S. H.: The therapy of the neuroses and psychoses. Ed. 3. Lea & Febiger, Philadelphia, 1948, p. 92.
4. Sadler, W. S.: Modern psychiatry. C. V. Mosby Co., St. Louis, 1945, p. 11.
5. Woodhead, B.: Psychologic aspect of allergic skin reactions in children. Arch. Dis. Childhood 21:98-104, June 1946.
6. Fenichel, O.: The psychoanalytic theory of neuroses. W. W. Norton & Co., New York, 1945, p. 256.
7. Harris, C.: Play technique. Bulletin of Pediatrics (The American College of Osteopathic Pediatricians), p. 7, Nov. 1948.
8. Spiegel, E. A., ed.: Progress in neurology and psychiatry. Grune & Stratton, New York, 1946, p. 339.

# Mumps and Its Complications
## Advances in Diagnosis and Treatment*

LEOPOLD SALKIND, D.O.
Philadelphia

Mumps, also known as epidemic parotitis, almost invariably comes and goes with little concern. Few are aware of possible complications capable of interfering with the health and well-being of the affected individual. However, new methods of diagnosis and treatment of mumps and its complications necessitate a review and a careful analysis of the value of the newer advances.

Mumps is an acute contagious disease characterized by swelling and tenderness of one or more of the salivary glands, and accompanied by fever and constitutional symptoms. Mumps occurs in epidemic form between the fourth and fifteenth years. In children under 2 years of age and in the aged, the disease is infrequent—infants up to 8 to 10 months are usually entirely immune. Neither sex, race, nor climate seems to have much to do with the epidemiology; however, boys are more often affected than girls and the disease tends to be most prevalent in the winter and spring months. Individual susceptibility is not nearly so great as in other contagious diseases, and once mumps has occurred, immunization is lasting. The etiology of the disease is undetermined, but it is thought to be caused by a virus which enters the nose and mouth and travels to and up through Stensen's duct into the body of the parotid gland. The spread of the disease is by direct contact, that is, by droplet infection. Infection by way of a third person or by inanimate objects is highly improbable; however, articles freshly soiled with discharges of infected persons may transmit the disease.

The incubation period of mumps is usually from 17 to 21 days. Exceptional cases have been reported in which the incubation periods have been as little as 1 week or as long as 4 weeks.

### SYMPTOMS

In the majority of cases the prodromal symptoms are often absent or extremely slight; they are anorexia, headaches, vomiting, pain in the back and limbs, and a temperature ranging from 100-101 F. In the more severe cases, the temperature may be as high as 104 or 105 F. with intense headaches, delirium, and, occasionally, convulsions; rigidity of the neck muscles may appear so that suspicion of meningitis may arise.

Parotid swelling is usually found below the ear lobe extending in front of and behind the ear, causing the lobe to be displaced upward and outward. The lobe usually divides the swelling in half. The area is found to be painful and tender. The amount of saliva usually found in the mouth is diminished, due to the swelling of the parotid duct wall, which naturally interferes with mastication and deglutition. It is characteristic that upon eating acid or sour food such as lemon juice or sour pickles the pain is often exaggerated.

The swelling which may reach its height any time from a few hours to a few days after onset, starts on one side, goes to the other and then circles the chin, giving the patient an appearance of being bloated. However, it is not unusual to find swelling limited to one side and involving only one of the parotid, submaxillary or sublingual glands. The duration of mumps is approximately a week to 10 days. Cases have been reported in which involvement of the two sides has been separated by an interval of 5 or 6 weeks.

The mouth usually presents a normal appearance, but at times stomatitis may appear. Trismus may be present in varying degrees. A red spot on the mucosa may be seen at the level of the second upper molar. This represents eversion of Stensen's duct which is in a process of inflammation. The orifices of the submaxillary and sublingual glands may appear beneath the tongue and near the frenum and plica sublingualis, respectively.

The blood picture usually shows a lymphocytosis with either leukopenia or leukocytosis. It is not uncommon to find the spleen enlarged. The urine in uncomplicated cases shows a faint trace of albumin and an occasional cast.

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, Philadelphia, June 5, 1949.

### DIFFERENTIAL DIAGNOSIS

Mumps is most likely to be confused with an acute cervical adenitis in which swelling is usually found below the jaw. The parotid gland itself may be the seat of infection which can only be detected by the finding of free pus at its opening after milking Stensen's duct. Parotid stones and tumors may be mistaken for mumps. Inflammation of the preauricular lymph node may cause swelling and tenderness directly over the parotid gland, but careful palpation will allow differentiation. Mumps limited to the submaxillary or sublingual glands may be diagnosed by noting history of exposure, typical complications, or by laboratory methods.

### COMPLICATIONS

The complications of mumps are numerous, sterility being the one most feared. Orchitis which is rare in childhood may affect 15 to 20 per cent of young males. It occurs the second or third week of the disease. The constitutional symptoms may be quite severe. The testicular swelling usually lasts for 2 to 4 days with ultimate atrophy of the organ.

In the female there may occur inflammation of the ovaries, accompanied by pain in the breasts and external genitalia. Relief may be obtained by applications of heat.

Pancreatitis (although uncommon) may begin abruptly 3 or 4 days after the onset of mumps, with severe epigastric pains, nausea, vomiting, and tenderness in the upper abdomen. There is often a moderate degree of fever, leukocytosis, slow pulse, and either constipation or diarrhea with, at times, large fatty stools. There may be transient glycosuria. The prognosis is good; complete recovery in 1 week is common. Heat over the part, sedation, soft diet, and the forcing of plenty of fluids constitute the indicated treatment.

Deafness is a rare complication which occurs most often in the second week and is generally unilateral.

Encephalitis is a less common complication, coming on rather suddenly with headaches, vomiting, increased temperature, drowsiness, convulsions, and the appearance of a positive Kernig sign. The spinal findings are not different from those of other types of encephalitis. Treatment is symptomatic and consists of bed rest, the use of abundant fluids, alcohol rubs, and sponge baths.

Ice caps to reduce the high temperature should not be overlooked. If the patient cannot swallow, feeding parenterally or by gavage should be resorted to. Should symptoms of increased intracranial pressure occur, repeated spinal taps can be carried out with care being exercised not to withdraw too great a quantity of fluid at one time. Intravenous injections of 50 cc. of 50 per cent glucose solution will help relieve the increased pressure.

The physician must be on the watch for other complications such as labyrinthitis, conjunctivitis, meningitis, inflammation of lacrimal duct, and nephritis. Some rare complications are edema of the pharynx and larynx, arthritis, endocarditis, myocarditis, pericarditis, and pleurisy.

### TREATMENT

Osteopathic manipulative therapy used as part of the course of treatment in children gives gratifying results. Manipulation begins with the neck at its union with the head. Every vertebra should be adjusted from the atlas down; particular attention should be given to the occipital area, to the ribs from the first to the twelfth and to both clavicles. In order to relieve obstructive congestion, correction of vertebral lesions from the tenth dorsal to the sacrum is advisable. At the symphysis pubis, gentle pressure may be exerted over the ureters where they empty into the bladder to aid elimination of waste products from the kidneys.

Bed rest should prevail during the period of fever and swelling. Heat applied to painful parts may afford relief, although some authorities believe that cold should be used. A semisolid or liquid diet should be used, consisting of thin gruels, thick soups, custards, canned peas, puddings, ice cream, ices, or fluids which may be sucked through a glass straw if pain is experienced on mastication. Raw fruit juices are usually found irritating.

The mouth should be cleansed with Dobell's Solution or a mild alkaline solution containing 1 per cent borax to prevent suppuration of the inflamed glands.

### RECENT ADVANCES

Various virus studies on mumps are being carried on. One such study is concerned with a complement fixation test used in the detection of mumps. A sample of blood is taken from the patient and sent to the laboratory. In individuals with present or past infection antigens are found. These antigens are divided into two groups: (1) soluble antigens which are present in the blood stream after the third to fourth day of infection, reaching maximum concentration after the first week and disappearing by the second to third week and (2) virus antigens which do not appear in the blood stream until after the first week of infection, thereafter rising in concentration. They may be detected in the bloodstream indefinitely. This test is very helpful in diagnosing mumps without swelling or mumps meningoencephalitis with no other clinical signs or symptoms.

Recently attention has been called to the occurrence of elevated blood serum amylase during the active stages of mumps. High values may be expected when there is obstruction to the normal flow of secretions from diastase-producing glands, particularly the parotid and pancreas. Wolman and others[1] found the serum amylase level was elevated during the first week but usually returned to normal during the second week although some levels remained high at 18 days.

Enders[2] and his coworkers utilized the parotid glands of infected monkeys for an intradermal test for susceptibility to mumps. They treated the virus material with heat, thereby inactivating it, and prepared material suitable for skin testing. From these studies it has been determined that, previous to the infection of mumps, complement-fixing antibodies are absent and the skin test usually shows no reaction while immediately following the disease an immediate rise in antibodies occurs and the skin test usually becomes positive. The positive test is read 48 hours after injection. An area of erythema occurs, ranging from 10 to 40 mm. in diameter.

Vaccination employing formolized mumps virus has been used by Stokes, Enders, Maris, and Kane.[3] Two 1 cc. doses of formolized virus were given subcutaneously. About 50 per cent of the vaccinated children showed an increased resistance to the inoculations of mumps virus. Results of serial complement fixation tests revealed that in many of the children clinical mumps did not develop. Vaccinations had not entirely prevented infection since antibody appeared in their blood after the challenge inoculation. Vaccination has proved to be encouraging but the incidence of protection is not so great as might be wished and the immunity is of short duration.

In 1942 Cohn and his associates[4] prepared gamma globulin from large pools of normal plasma containing mumps complement-fixing antibodies concentrated 15 to 25 times. Stokes and Maris[5] administered 8 cc. of globulin in institutionalized children and found that its prophylactic value did not nearly measure up to the standards established in measles. However, the same authors administered 20 cc. of a gamma globulin concentrate prepared in large part from convalescent mumps serum and found a great prophylactic effect.

Gellis, McGuinness, and Peters[6] through their experiments concluded that gamma globulin in doses of 20 cc. when injected during the first 24 hours of mumps definitely reduced the incidence of orchitis. However, the lack of abundance of mumps gamma globulin prohibits its widespread use.

Hyperimmune serum has also been used in the prophylaxis of mumps. Serum, which had been allowed to collect in human blood pools and then sterilized, was used by Hess[7] in 1915, Regan[8] in 1925 and Skrotzky[9] in 1929, to avert mumps epidemics among exposed children. Barenberg and Ostroff[10] in 1931 and Zeligs[11] in 1932 also used this serum with great success; however, larger doses were employed. Cambessedes[12] in 1933 reported complete immunizations by this method. Thalhimer[13] in 1938 and Kutscher[14] in 1940 employed this serum also with good results. The dosage employed varied from 8 to 40 cc. While it is true that hyperimmune serum has proved successful, there is one great drawback to its use—great quantities of serum are needed for every single dose.

1630 S. 6th St.

REFERENCES

1. Wolman, I. J., *et al.*: Amylase levels during mumps; findings in blood and saliva. Am. J. M. Sc. 213:477-481, April 1947.
2. Enders, J. F.: Mumps; techniques of laboratory diagnosis, tests for susceptibility, and experiments on specific prophylaxis. J. Pediat. 29:129-142, Aug. 1946.
3. Stokes, J., Jr., *et al.*: Immunity in mumps; experiments on vaccination of human beings with formolized mumps virus. J. Exper. Med. 84:407-428, Nov. 1946.
4. Cohn, E. J.: Plasma proteins, their properties and functions. Tr. & Stud., Coll. Physicians, Philadelphia 10:149-162, Dec. 1942.
5. Maris, E. P., *et al.*: Immunity in mumps; correlation of presence of complement-fixing antibody and resistance to mumps in human beings. J. Exper. Med. 84:323-339, Oct. 1946.
6. Gellis, S. S., McGuinness, A. C., and Peters, M.: Study on prevention of mumps orchitis by gamma globulin. Am. J. Med. Sc. 210:661-664, Nov. 1945.
7. Hess, A. F.: A protective therapy for mumps. Am. J. Dis. Child. 10:99-103, Aug. 1915.
8. Regan, J. C.: Serum prophylaxis of epidemic parotitis. J. Am. M. A. 84:279-288, Jan. 24, 1925.
9. Skrotzky, A. I.: Seroprophylaxis of epidemic parotitis. Odessky M. J. 4:8-12, 1929.
10. Barenberg, L. H., and Ostroff, J.: Use of human blood in protection against mumps. Am. J. Dis. Child. 42:1109-1113, Nov. 1931.
11. Zeligs, M.: Convalescent serum in prevention of mumps. J. Pediat. 1:727-728, Dec. 1932.
12. Cambessedes, H.: L'emploi du serum de convalescents dans les oreillons. Ann. d'hyg. 11:83-94, Feb. 1933.
13. Thalhimer, W.: The prophylactic and therapeutic use of convalescent serums; scarlet fever, mumps, and chicken pox. J. Pediat. 14:257-261, Feb. 1939.
14. Kutscher, G. W., Jr.: Use of convalescent mumps serum. J. Pediat. 16:166-170, Feb. 1940.

ADDITIONAL REFERENCES

Brennemann, J., ed.: Practice of pediatrics. W. F. Prior Co., Hagerstown, Md., 1946, Vol. 11, Chapter 13.
Grulee, C. G., and Eley, R. C.: The child in health and disease. Williams & Wilkins Co., Baltimore, 1948, pp. 173-177, 676.
Holt's Diseases of infancy and childhood, revised and edited by L. E. Holt, Jr., and McIntosh, R. D. Ed. 11. D. Appleton Century Co., New York, 1940, pp. 393, 484, 617, and 1023.
Kugelmass, I. N.: Newer nutrition in pediatric practice. J. B. Lippincott Co., 1940, pp. 1005-1007.
Meakins, J. C.: Practice of medicine. Ed. 3. C. V. Mosby Co., St. Louis, 1940, pp. 34, 49, 96-99, 905, and 1312.
Mitchell-Nelson Textbook of pediatrics, edited by W. E. Nelson. Ed. 4. W. B. Saunders Co., Philadelphia, 1945.

# Gamma Globulin in Acute Infectious Diseases*

SHERWOOD BERMAN, A.B., D.O.
Philadelphia

With the collection of large pools of blood during the last war, opportunity was afforded for extensive studies of the many blood products. During these studies the protein fractions were carefully evaluated and it was ascertained that the globulin fraction obtained from serum was the protein fraction responsible for the antigenic and antibody reactions of the human system. Janeway,[1] Enders,[2] and others, showed that 80 to 90 per cent of the antigenic properties of globulin was concentrated in the gamma fraction. As a result of studies and experiments with gamma globulin a new agent was added to the therapeutics of infectious disease. The purpose of this paper is to review opinions relative to the status of gamma globulin in the treatment of measles, infectious hepatitis, pertussis, scarlet fever, poliomyelitis, German measles, chickenpox, and mumps.

Gamma globulin is distinct from immune globulin. The latter is concentrated from placental extract and possesses one twenty-fifth to one thirtieth the therapeutic value of gamma globulin. Immune globulin is also attended by marked local and systemic reactions when used in human beings.

## MUMPS

Gamma globulin from pooled blood contains 15 to 30 times the complement-fixing antibody found in convalescent serum. When the gamma globulin fraction is extracted from pooled convalescent serum, the complement-fixing antibody content is even higher. When used in 20 cc. doses its therapeutic effects are favorable. It has been shown to have a definite preventive effect upon the occurrence of orchitis, for, when the treated group was compared with a control group, there were approximately three and one-half times as many cases of orchitis in the control group. The dose of 20 cc. of gamma globulin is equivalent to 400 cc. of mumps convalescent serum or 4,500 cc. of normal plasma.[3]

## CHICKENPOX

This communicable disease has practically no mortality and few complications; however, its high degree of contagiousness and long incubation period frequently tie up a children's ward. Investigations were aimed to counteract this problem. Gamma globulin was used in 5 cc. doses. The attack rate in the exposed group was not significantly different from that in the control group.

## GERMAN MEASLES

This is also an acknowledged mild contagious infection. However, in view of recent developmental studies showing the correlation of birth of children with congenital defects to mothers who have contracted German measles during pregnancy, the attempt was made to prevent the occurrence of German measles

*Presented at the meeting of Region I, American College of Osteopathic Pediatricians, Philadelphia, June 5, 1949.

in pregnant mothers. Studies to date have not shown any significant prevention attributable to the use of gamma globulin. These studies are not encouraging and further investigations are being carried out.

### POLIOMYELITIS

The rationale of investigative studies into the probable value of gamma globulin in this infection may be summarized in the recognition that gamma globulin is derived essentially from pooled plasma of adult blood and that the antibody content of adult blood, in general, is higher than that of juvenile blood. Gamma globulin contains antibodies to poliomyelitis. Fruitful results might be anticipated in the use of gamma globulin in treating the disease. Extensive studies were made by the New York State Department of Health by giving gamma globulin in the preparalytic stage.[4] Gamma globulin has not been beneficial in any way; however, further investigations are being conducted.

### WHOOPING COUGH

The definite place that hyperimmune human whooping cough serum has achieved in the management of exposed and developing pertussis is well known. The effective dose of 10 to 20 cc. is accompanied by the handicap of high cost. The injection is productive of pain and discomfort when given to children. Recently this serum has been subjected to fractionation and the gamma globulin thus obtained contains in 2.5 cc. as many antibodies as are found in 25 cc. of convalescent serum. Its use is not attended by pain, discomfort, or high cost.

### ACUTE INFECTIOUS HEPATITIS

This disease has sporadic outbreaks and has a low mortality but may cause considerable disability and may have serious late complications. Stokes and Neefe[5] studied a group of susceptible boys and girls and some adults in a camp while an epidemic was in progress. They obtained good protection when globulin was injected early in the incubation period in doses of 0.15 cc. per pound of body weight. Havens and Paul[6] report a similar experience in a children's home with the dose of 0.06 to 0.12 cc. per pound of body weight. The results of these investigations indicate an important use of globulin in limiting epidemics of infectious hepatitis; however, its use is ineffective in the treatment of the disease itself, even when administered early and in large doses.

### SCARLET FEVER

The concentration of antitoxin, antibodies, and antistreptolysin in gamma globulin is two to five times as great as that found in convalescent serum. A study of 1,667 cases has recently been published with the following results: Gamma globulin has proved generally satisfactory in reducing fever and toxemia and in alleviating early symptoms. The percentage of complications in severe cases was the same whether they were treated with gamma globulin or convalescent serum; however, when gamma globulin was used, there was no possibility of serum reactions. When mild cases were treated with gamma globulin as compared to those symptomatically treated there was a significant drop in septic complications. Early complications of all nontreated patients with mild infection were greater than those that occurred in severe cases of scarlet fever that were treated with globulin or antitoxin. Gamma globulin has proved effective in the management of scarlet fever, particularly in the reduction of early and late complications and especially rheumatic fever.

### MEASLES

It is in this infection that globulin has received most of its publicity and produced the most favorable results. Globulin is now accepted for use in the prevention and the attenuation of measles. Its value as a therapeutic agent in this infection is still being investigated. The deaths due to measles as reported by the New York Board of Health are greater than the combined deaths attributable to smallpox, diphtheria, and pertussis. There is no known agent that can confer active immunity to measles. The greatest danger in this infection is in the young. Of the deaths due to measles 60 per cent occur under the age of 5 years. It is recommended that infants under the age of 2 years be given complete protection on exposure and that older children if debilitated or in poor health be also protected against the disease.

As it is believed that measles is productive of permanent immunity, it is suggested that all children be given an attenuating dose to prevent the possibility of severe infection and complications and to allow permanent immunity to develop. Gamma globulin will give complete protection for 3 weeks. Globulin may be given any time between the fourth and eighth day after the initial exposure, the size of the dose depending on whether modification or prevention is desired. For prophylaxis of measles 0.08 to 0.10 cc. per pound of body weight is used, and for attenuation the dose of globulin which should be given is 0.02 to 0.025 cc. per pound of body weight. The injection is given intramuscularly and is rarely attended by any general or systemic reactions. Stokes, Maris, and Gellis[7] have investigated the use of globulin in the treatment of measles. Their report is that when globulin is given to children after the rash has appeared modification of the infection occurs in less than half of the group studied.

### SUMMARY

It may then be concluded that gamma globulin is of definite value in the prevention and control of measles. Globulin prepared from antipertussis human serum is of significant value and is to be recommended in pertussis. Gamma globulin has some value in the management of scarlet fever particularly in the reduction of complications, as a prophylaxis in control of epidemics of hepatitis, and in huge doses it may prevent complications in mumps. Its value is unproved in German measles, poliomyelitis, chickenpox, and in the treatment of measles.

6127 Castor Ave.

### REFERENCES

1. Janeway, C. A.: Use of human serum gamma globulin in prevention and attenuation of measles. Bull. New York Acad. Med. 21:202-222, April 1945.

2. Enders, J. F.: Concentrations of certain antibodies in globulin fractions derived from human blood plasma. J. Clin. Investigation 23:510-530, July 1944.

3. Enders, J. F.: Mumps; techniques of laboratory diagnosis, tests for susceptibility, and experiments on specific prophylaxis. J. Pediat. 29:129-142, Aug. 1946.

4. Bahlke, A. M., and Perkins, J. E.: Treatment of preparalytic poliomyelitis with gamma globulin. J. Am. M. A. 129:1146-1150, Dec. 23, 1945.

5. Stokes, J., Jr., and Neefe, J. R.: The prevention and attenuation of infectious hepatitis by gamma globulin. J. Am. M. A. 127:144-145, Jan. 20, 1945.

6. Havens, W. P., and Paul, J. R.: Prevention of infectious hepatitis with gamma globulin. J. Am. M. A. 129:270-272, Sept. 22, 1945.

7. Stokes, J., Jr., Maris, E. P., and Gellis, S. S.: Use of concentrated normal human serum gamma globulin (human immune serum globulin) in prophylaxis and treatment of measles. J. Clin. Investigation 23:531-540, July 1944.

### ADDITIONAL REFERENCE

Davison, W. C.: The compleat pediatrician. Ed. 5. Duke University Press, Durham, N. C., 1946, p. 54.

## dependable contraceptive materials

in a modern and convenient kit

# ortho kit

an attractive blue, woven-Lumite plastic zipper bag

***discreet *dainty *durable *esthetic**

Your patients will appreciate these most widely prescribed contraceptive materials in this modern, convenient Ortho Kit.

**contents:** Ortho-Gynol, regular size; Ortho-Creme, trial size; Ortho Introducer and Ortho Diaphragm in prescribed sizes—55, 60, 65, 70, 75, 80, 85, 90, 95 mm.

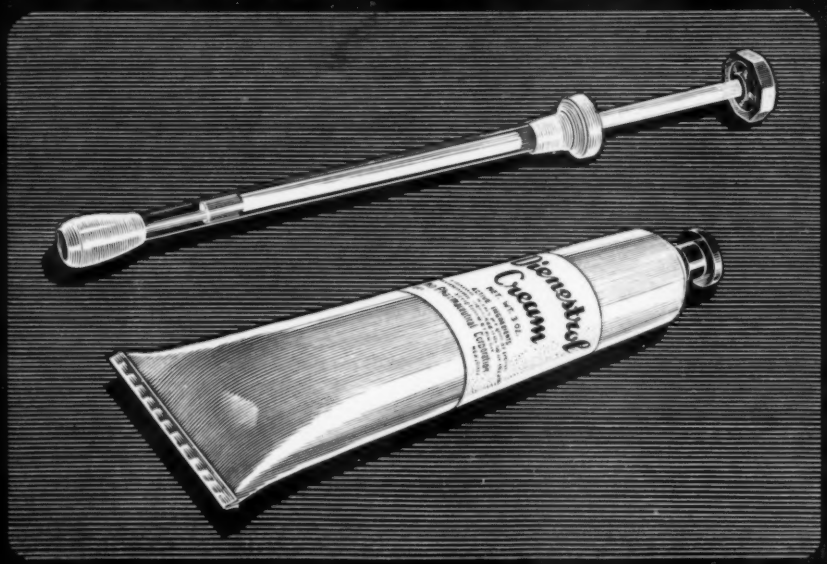
**active ingredients:**

Ortho-Gynol: Ricinoleic acid 0.75%, boric acid 3.0% and oxyquinoline sulphate 0.025%.

Ortho-Creme: Ricinoleic acid 0.75%, boric acid 2%, sodium lauryl sulphate 0.28%.

ortho pharmaceutical corporation, raritan, n. j.

# Dienestrol Cream




## for effective local vaginal estrogenic therapy

***In postmenopausal, and atrophic vaginitis and pruritus vulvae*** associated with the menopause and other hypoestrogenic conditions, Dienestrol Cream—containing the synthetic estrogen Dienestrol—provides,

1 Rapid restoration of vaginal epithelium to a more normal healthy state;

2 Prompt relief of symptoms.

Dienestrol Cream is well tolerated. "No complications were noted, even in those patients who used the cream irregularly for as long as twelve months."*

Dienestrol Cream is also valuable prophylactically prior to and following vaginal plastic operations in postmenopausal women.

Dienestrol Cream is available on original prescriptions in 3 oz. tubes with the Ortho measured-dose vaginal applicator. Specify *Dienestrol Cream with applicator.*

*McLane, C.M.: Am. J. Obst. & Gynec. 57:1018 (May) 1949.

ortho pharmaceutical corporation, raritan, n. j.

## DEPARTMENT OF PUBLIC RELATIONS

*(Continued from page 458)*

pathic Association have been approved by the Veterans Administration, and a number of osteopathic physicians are now serving in the VA Department of Medicine and Surgery.

Thus, while one arm of the Federal government is hiring osteopathic physicians as qualified to render medical services on an equivalent basis with doctors of medicine, another arm of the Federal government denies to the States the exercise of a similar prerogative in the Social Security program, even though the State must contribute and may be bearing the principal expense of the services involved.

We request that the terms "medical care" and "hospitalization" be expressly defined to include the services of osteopathic physicians and hospitals staffed by osteopathic physicians.

AMENDMENT NO. 1

We submit the following amendment:

Page 198, after line 7, insert a new paragraph reading as follows:

(4) Sec. 1101 (a) of the Social Security Act is further amended by adding at the end thereof the following new paragraph:

(8) The terms "physician" and "medical care" and "hospitalization" include osteopathic practitioners or the services of osteopathic practitioners and hospitals within the scope of their practice as defined by State law.

The proposed amendment is in consonance with definitions of these terms as employed by Congress in connection with the rehabilitation program under the U. S. Employees Compensation Act, as amended, which reads:

The term "physician" includes surgeons and osteopathic practitioners within the scope of their practice as defined by State Law.

The term "medical, surgical, and hospital services and supplies" includes services and supplies by osteopathic practitioners and hospitals within the scope of their practice as defined by State law (U.S.C., 1940 ed., title 5, sec. 790)

The proposed amendment would not foreclose further extension of these terms by administrative interpretation because Sec. 1101 (b) provides: "The terms 'includes' and 'including' when used in a definition contained in this Act shall not be deemed to exclude other things otherwise within the meaning of the term defined."

Under the proposed amendment the States will be free to utilize the services of the osteopathic profession and its institutions in like manner as it may use the services of doctors of medicine and medical hospitals without fear of prejudice or jeopardy of Federal approval of their State plans for services under the respective titles of the Social Security Act. In addition, the amendment will confirm eligibility of doctors of osteopathy as physicians for purposes of physical examinations under Title II of the Social Security Act, as amended by H.R. 6000.

AMENDMENT NO. 2

Our second proposed amendment is as follows:

Page 57, line 3, strike the word "osteopath."

This is a technical amendment made necessary by the adoption of amendment No. 1. This is the exemption clause.

Senator JOHNSON. Would that amendment be subject to the adoption of amendment No. 1?

Dr. STARKS. Yes.

Senator JOHNSON. If amendment No. 1 is not adopted, then amendment No. 2 should not be adopted. Is that not correct?

Dr. STARKS. No. An amendment similar to our amendment No. 3 should be substituted then.

AMENDMENT NO. 3

Our next and final amendment is as follows:

Page 159, lines 19 and 20, namely, line 19 after the word "physician" insert the phrase "(doctor of medicine or osteopathy)," and line 20 after the word "dentist" strike the word "osteopath."

The effect of the amendment is to include osteopathic physicians within the term physician as employed in Sec. 1641 (c) of the Internal Revenue Code as amended by the pending bill.

The present language of the bill lists "physician" and "osteopath" in separate categories which establishes an undesirable precedent and is a prejudicial deviation from former congressional and departmental classifications.

The suggested change is in conformity with language employed by the Civil Service Commission in Federal Personnel Manual MI-3 which reads: "Medical certificates for use in connection with temporary appointments and transfer, promotion, or reappointment under Part 10 of the Commission's Regulations may be executed by any duly licensed *physician (doctor of medicine or osteopathy).*"

An osteopathic physician is a "competent, licensed physician" under the regulations of the Civil Aeronautics Administration:

Some question has arisen with regard to the interpretation of a "competent, licensed physician" who may conduct the subject examination.

Form ACA 1345, Report of Physical Examination for Student and Private Pilots, has heretofore stipulated that application for the examination be made to any licensed physician (M.D.) in active practice. Inasmuch as there appear to be physicians other than M.D.'s who are properly licensed, equipped, and fully capable of conducting this examination, the Form ACA 1345 has been revised, deleting reference to M.D.

Inspectors may therefore accept a medical certificate from an applicant where such certificate has been executed by any doctor of medicine or doctor of osteopathy licensed to practice under the laws of the state involved. Safety Regulation Instruction No. 206, Civil Aeronautics Administration, Department of Commerce.

The case of Howerton v. District of Columbia held: "The science of osteopathy has become sufficiently established to justify the classification of its practitioners within the exception to the act, 'regular practicing physicians'." 52 App. D. C. 230, 289 Fed. 628 (1923), construing Act of May 22, 1918 (40 Stat. 560).

Stedman's Medical Dictionary definition of osteopathy reads: "Osteopathy. A school of medicine based upon the theory that the normal body, when in correct adjustment, is a vital machine capable of making its own remedies against infections and other toxic conditions. The office of the *physician* of this school is to search for, and when found, to remove, if possible, any peculiar condition in joints, tissues, diet, or environment which are factors in destroying the natural resistance. The measures upon which he relies to effect this end are physical, hygienic, medicinal, and surgical, while relying chiefly on manipulation."

No Congressional definition of physician excludes osteopathic physician. On the contrary, Congress has on a number of occasions specifically included doctors of osteopathy in the term physician: Public Law 558, 75th Congress, 52 Stat. 586, 5 U.S.C.A. 790; Public Law 658, 79th Congress, 60 Stat. 904, 5 U.S.C.A. 150.

CONCLUSION

In the early part of my testimony, I adverted to certain letters from the Chairman of the House Ways and Means Committee and the Commissioner of Social Security. I ask that they be inserted in the record following my remarks.

Senator MILLIKIN. Mr. Chairman, I see that Mr. Cohen has returned.

Mr. Cohen, why has the security agency held that the terms "medical care" and "hospitalization" as used in the Social Security Act do not include services of doctors of osteopathy?

Mr. COHEN. (Wilbur J. Cohen, special assistant to Commissioner for Social Security). I believe you have reference there to the provisions of title V on maternal and child health and crippled children.

The CHAIRMAN. That is correct.

Mr. COHEN. It is my understanding, if I recollect correctly, that the position that was taken was that Congress did not specifically, as it had in other statutes, include osteopathy.

Senator MILLIKIN. Has not Dr. Altmeyer recently stated that the osteopaths would not be discriminated against?

Mr. COHEN. I don't recollect whether that is in reference to the same matter that we are talking about today or not.

Senator MILLIKIN. Then do you recommend that if it is the view of this committee and of the Congress that osteo-

paths should be included, we should spell it out? Is that correct?

Mr. COHEN. Yes, sir. If the policy decision of the Congress is that it should be included, then I think it should be done by statute.

Dr. STARKS. The letter from the Chairman of the Ways and Means Committee indicates that the bill includes osteopathic services as "medical care" and says Commissioner Altmeyer has given assurances against discrimination. The Commissioner's letter says he believes the bill does not discriminate.

Mr. Chairman, the sincerity of these gentlemen is not questioned. However, similar assurances also were given at the time of the adoption of the Social Security Act in 1935. For example, under date of February 20, 1935, the legislative chairman of the New Mexico Association of Osteopathic Physicians and Surgeons, Dr. McCune, wrote to Mr. Harry L. Hopkins, a member of the Committee on Economic Security which sponsored the original Social Security Act, as follows:

Dear Sir:

Referring to the Economic Security Act which I am informed is now pending in Congress, I, as chairman of the legislative council of the New Mexico Association of Osteopathic Physicians and Surgeons, am asking if you will be so kind as to lend your influence to the end that nothing shall be written into this Act at the time of its passage and approval, concerning health supervision, which would admit it to be construed as a preference to any school of practice.

We wish particularly that no regulation shall be incorporated in this Act which would indicate congressional intention of a discriminatory nature as between practitioners of the various schools of healing practice.

Yours very sincerely,

CAROLINE C. McCUNE, D.O.
Legislative Chairman

Under date of February 27, 1935, Dr. McCune received a reply from the Executive Director of the Committee on Economic Security as follows:

Dear Dr. McCune:

Honorable Harry L. Hopkins, the Federal Emergency Relief Administrator, who is a member of this Committee, has asked us to answer and reply to your letter of February 20 in which you urge that the economic security act make no discrimination between different groups of physicians and surgeons.

We can assure you that there is no such discrimination provision in this bill.

Appreciating your interest in this very important subject, we are

Sincerely yours,

COMMITTEE ON ECONOMIC SECURITY
/S/ Edwin E. Witte
Executive Director

The Federal administrative agency took a contrary view, as I have described.

The Social Security Act is administered in every city, village, and town. If the terms physician and medical care and hospitalization include the services of osteopathic physicians and hospitals, then the people entitled to benefits under the Social Security Act and the administrators at all levels are entitled to know it, and it is respectfully submitted that the only conclusive vehicle for conveying that information is by express inclusion in the context of the law, as our suggested amendments provide.

Mr. Chairman, that completes my statement. I want to assure you that the Colorado Osteopathic Association and the American Osteopathic Association stand ready to cooperate in any way possible with your Committee in regard to this legislation. Thank you for your attention and consideration.

The CHAIRMAN. Thank you very much, Doctor. You referred to two letters from the chairman of the House Ways and Means Committee and the Commissioner of Social Security. If you will hand them to the reporter, they will be incorporated in the record following your statement.

Are there any questions?

Senator MILLIKIN. I am glad to see you, Doctor.

Senator JOHNSON. I appreciate the chairman's assistance in making it possible for Dr. Starks to appear here. He got his application in just a little late, and we had to have a special dispensation to make the arrangements.

I do want to thank the chairman for making those arrangements.

The CHAIRMAN. We were very glad to have you appear, Doctor.

Dr. STARKS. I want to thank the Chairman, too.

(The letters submitted by Dr. Starks for the record follow):

COMMITTEE ON WAYS AND MEANS
HOUSE OF REPRESENTATIVES
WASHINGTON, D. C.

August 22, 1949

Honorable Noah M. Mason
House of Representatives
Washington D. C.

My dear Colleague:

This is in reply to your letter of August 18th concerning osteopaths under the public assistance provisions of H. R. 6000.

I have discussed this matter with representatives of the Social Security Administration and have been assured by Mr. Altmeyer, the Commissioner, that the term "medical care" will not be interpreted to discriminate against osteopaths.

In order to make it absolutely clear that the term will be interpreted in this way, the following sentence has been included in the Committee Report:

"The term 'medical care' is not defined in the bill. Since medical care is to be provided in accordance with State plans, the term includes medical services provided by any person authorized by State law to render such services."

Sincerely yours,

/S/ R. L. DOUGHTON
R. L. Doughton
Chairman

RLD/glk

FEDERAL SECURITY AGENCY
WASHINGTON

August 22, 1949

Hon. Noah M. Mason
House of Representatives
Washington 25, D. C.

Dear Dr. Mason:

I have read your letter to Mr. Doughton, dated August 18, and Mr. Gourley's letter to you, dated August 17, copies of which you were kind enough to send to us, dealing with the matter of the status of osteopathic physicians under the public assistance provisions of H. R. 6000.

The term "medical care" as used in the bill with reference to State plans of public assistance is not a defined term. The term, therefore, means such medical services as may be provided under the State plan by such persons as are authorized by State law to give such services. In view of this fact, we do not believe that the bill discriminates against practitioners of osteopathy or osteopathic patients.

We would have no objection to this information being included in the Committee report or in a statement by the Chairman of the Committee when the bill comes up for debate.

Sincerely yours,

/S/ A. J. ALTMEYER
Commissioner

## ACCOMPLISHMENTS OF RESEARCH SCIENTISTS

Examples of accomplishments of research scientists whose work has been supported by Public Health Service grants include the following: At Duke University, a drug, banthine, has been developed which has proved beneficial in treatment of stomach ulcers. At Cornell University, new findings about nutrition and the aging process show that a high calcium diet may aid in reducing the chances of bone fractures among older people. At the University of California, investigators have recently announced the production of chemical fragments from the adrenocorticotropic hormone molecule, which have ACTH activity and which perhaps may be synthesized on a large scale.

The National Institutes of Health asked Congress for $1,100,000 to support the purchase of Cortisone and ACTH. The only ACTH so far has been isolated from hog pituitaries. Cortisone, so far, has come entirely from ox bile. Neither of these drugs has yet been synthesized, although on a very small laboratory scale there has been a partial synthesis of Cortisone. Research on these drugs is stimulating research on interaction of a variety of metabolic processes in the cause of disease.

Work on an apparatus to bypass the heart and lungs is developing. It may become possible to offer human beings intracardiac operations for correction of valve defects, et cetera, and at the same time have their blood run through a machine where it will be oxygenated and carbon dioxide will be removed. There is also the future prospect of replacing, in part, certain of the heart valves with things like polyethylene valves.

# Current Medical Literature

## FOOT PROBLEMS IN CHILDREN

Diagnosis and treatment are discussed by Frederick Lee Liebolt, M.D., in the April 1950 issue of *Surgery, Gynecology, and Obstetrics.*

The *pronated foot* is one with a good longitudinal arch which shows internal rotation when the child stands. Correction is accomplished by the insertion of ⅛ inch heel wedges in the shoe (increased to 3/16 inch, when the child is older) and strengthening exercises for the anterior and posterior tibial muscles. Prognosis for the pronated foot is good.

A relaxed longitudinal arch and dorsiflexion of 15 to 30 degrees less than a right angle characterize the *weak foot.* These findings are often present at birth. Half of them develop normally. Treatment, begun after the child is walking, consists of the use of inner heel and outer sole wedges, each ⅛ inch thick. After the age of 3 years the inner heel wedge is increased to 3/16 inch. Barefoot walking should not be permitted for long. The prognosis is fair.

The severe congenital weak foot, *talipes calcaneovalgus,* however, has a poor prognosis, frequently developing into flat foot. Valgus and pronation are present. Dorsiflexion, from 30 to 45 degrees less than a right angle, may even allow the dorsum to touch the tibia. Inner heel and inner sole wedges are used to support the inner border of the foot. Arthrodesis, performed when the child is about 10 years old when the bones have matured enough, is indicated.

True flat foot, known as *plantar flexed talus,* is a congenital deformity with a poor prognosis. The use of dural aluminum or monel metal arch supports should be prescribed until subtalar arthrodesis can be performed.

Early conservative treatment of *cavus foot,* a condition with an extremely high longitudinal arch, includes the use of metatarsal pads and bars and stretching exercises with subsequent surgery, first the transplantation of the long toe extensor tendons and then subtalar arthrodesis, if there is a bony deformity. Cavus foot is recognized by hyperextension of the metatarsophalangeal joints, hyperflexion of the interphalangeal joints, and depressed metatarsal heads, which are caused by overactive long toe extensor tendons.

Spontaneous recovery is usual in *Koehler's disease,* an osteochondritic aseptic necrosis, with pain on walking, tenderness, and sometimes redness and swelling over the navicular bone. It may be treated with soaking in hot epsom salt solution, massage, and wearing a monel metal or aluminum arch support made from a plaster mold.

*Frieberg's disease,* also osteochondritic, affects the metatarsal head. Pain, swelling, and redness, localized at a metatarsal head, progress to metatarsalgia. There is a palpable bony rim, and the toe is a little short. At first the foot is soaked in hot epsom salt solution and massaged. A metatarsal pad or metatarsal bar should be inserted in the shoe or the insole. When the child is older, surgical excision of the bony rim of the metatarsal head, or resection of the head of the metatarsal bone, or the removal of extraneous bony matter from the joint may be indicated.

*Calcaneal apophysitis,* with the presenting symptom of pain at the insertion of the calcaneal tendon, receives the same symptomatic treatment. The pull of the tendon is relieved by elevating the heel of the shoe. The foot suffers no long-standing ill effect.

*Fracture* of the foot should always be considered possible, even in very young children.

The congenital flexion deformity at the interphalangeal joints of any toe, known as *hammer toe,* needs no treatment unless a painful dorsal callosity develops. If the second toe is longer than the first, short shoes may possibly have caused the deformity. Arthrodesis performed near the tenth year corrects and relieves the condition permanently.

*Overlapping toes* often adjust to a normal position during growth but are not corrected by splints or straps. If there are symptoms in the adult because the condition has persisted, amputation may be performed.

*Hallux varus* is fairly normal in infants and needs no treatment, since, when shoes are worn, the toe straightens.

In the case of a *subluxated fifth toe* the treatment of choice is the removal of the contracture and straightening of the toe, rather than amputation.

The painful deformity known as *varus toe* usually is fixed and can be corrected only by arthrodesis.

*Web toe is* usually a skin or soft tissue webbing with the digits distinct and bones, joints, and nails normal, although occasionally webbing of the bone occurs. When there are no symptoms, which is usual, treatment is omitted, unless plastic repair is requested.

*Accessory toes* are x-rayed, preferably at birth. If all the toes are normal, no treatment is considered necessary. Amputation is performed, if the digit or projection is likely to produce an unsightly or symptomatic deformity.

*Callosities* in children come from ill-fitting shoes and disappear when the feet are properly fitted.

*Diaphoresis* is normal. If treatment seems advisable, a powder of salicylic acid, 3 grams, boric acid, 10 grams, and talcum to make 100 grams to be applied night and morning to the feet, especially between the toes, and in the shoes to to be worn the next day, may be prescribed.

*Metatarsus varus,* the adduction of the forefoot on the rearfoot, if postural, can be overcorrected by passive manipulation and treated by an outer sole wedge ⅛ inch thick, later increased to 3/16 inch; if structural, the deformity is fixed and the prognosis is not so good. It is treated by a wedging plaster cast which forces the forefoot into an overcorrective position. Six weeks is usually adequate.

*Talipes equinovarus,* the severe inherited congenital deformity commonly called clubfoot, is diagnosed and confirmed by the occurrence of similar deformities in the family. The forefoot is turned in, the heel drawn up, and the foot is inverted and in plantar flexion. Treatment should be started immediately, at the birth of the child, since the degree of correction, never total, depends upon age of the child. Wedge plaster casts are usually used as Kite described. Surgery is not attempted until the presence of residual deformities is established.

Liebolt warns against the use of "orthopedic shoes," booties, artificial leather, rubber soles, and soft sole shoes. He mentions the dangers involved in the use of shoe-fitting fluoroscopes. Normal feet and proper shoes, wedges, and fitting are described.

## STUDIES IN ACNE

The role of the general practitioner in prescribing topical therapy for acne vulgaris is described by Helen Dexter, M.D., in *The Journal of the American Medical Association,* March 11, 1950. The recommended therapeutic approach was used for 100 patients with this common affliction.

At the initial examination, aggravating factors were explained to the patient. Dietary restrictions included the avoidance of chocolate (the greatest offender), cola beverages, nuts, and fried foods. Cosmetically, the skin was not washed often or thoroughly enough. Use of greasy creams or oily hair dressings sometimes was responsible. The topical therapy advised provided a cosmetic cover with medicinal value. Since the heat of the hand can stimulate sebaceous secretion and fingers can traumatize the existing pustules, hands were ordered off the face. Psychic factors and adverse environmental situations were known to increase the difficulty of treating acne. Sometimes psychotherapy was advised. Sometimes the irritating circumstances were avoided. Iodides, bromides, and possibly testosterone taken for pre-existing conditions were observed to irritate acne. If grease and oil were contacted occupationally, careful scrubbing after work was prescribed, to be supplemented during the day by frequent

washing. Such aggravations as menstruation, shaving, and hot weather were known to be followed by acne.

Patients were instructed to wash the face with water as hot as possible, using two lathers and a cold rinse—to remove the sebum with hot water and soap, and to inhibit further secretion with the cold rinse until the application of 2 per cent resorcinol, 8 per cent sulfur, and 11 per cent alcohol in a nonoily flesh-colored base (Acnomel) was made. Patients were seen once a week, until the details of the therapy were regulated.

Rapid improvement ensued in patients whose complaint had endured 6 months or less. In all cases the acne was arrested. Improvement was the usual result.

The general practitioner was advised not to tell a patient acne is nothing to worry about and that he will outgrow it. Each lesion may scar the face. Psychic trauma may remain long after other adolescent ills have gone. Effective treatment is simple and can be adopted for either the clinic or the office patient.

---

### OBSERVATIONS ON THE CLINICAL USE OF AUREOMYCIN

Wallace E. Herrell, M.D., in the *Proceedings of the Staff Meetings of the Mayo Clinic*, December 7, 1949, observes that aureomycin is the most important development in antibiotics since penicillin. This substance, produced by Streptomyces aureofaciens, acts against certain gram-negative and gram-positive microbes bacteriostatically and bacteriocidally.

Antivirally, its use is limited to the larger viruses causing infection, such as lymphogranuloma inguinale and psittacosis, which are nearer the rickettsias, against which aureomycin is reported effective, for example, Q fever, rickettsialpox, and Rocky Mountain spotted fever. It has been tried for the common cold, influenza, poliomyelitis, plantar wart, variola, rubeola, and herpes and found lacking for these conditions.

Aureomycin is most useful against pneumonia, having brought about clinical improvement in cases of primary atypical pneumonia and being an inhibitor of the bacterial types caused by Diplococcus pneumoniae, Streptococcus pyogenes, Micrococcus pyogenes, and the important gram-negative organisms.

Blood-stream and urinary infections where it is indicated are those caused by Streptococcus faecalis, Aerobacter aerogenes, Escherichia coli, and the penicillin-resistant staphylococci. Tuleremia has been treated with aureomycin with good results. Infections from Neisseria gonorrhoeae respond, although penicillin remains the superior therapy and costs less to the patient. Gas gangrene calls for aureomycin combined with antiserum. Further experiment should be conducted on its use in whooping cough, the bacteroides infections, and typhoid fever.

The drug apparently is three times more effective than penicillin for infections caused by Borrelia novyi and Leptospira icterohaemorrhagiae. Syphilotherapy definitely includes aureomycin. In the treatment of neurosyphilis it is superior to penicillin.

For acute brucellosis, 3 grams of aureomycin orally with 2 grams of dihydrostreptomycin intramuscularly daily for 12 to 14 days is usually effective. For brucellosis with localizing lesions of the urinary tract or the skeletal system 3 grams of aureomycin orally and 1 gram of dihydrostreptomycin intramuscularly daily for 28 days is recommended. This suppresses the development of the disease but is not yet dependably curative.

Aureomycin is excreted constantly and is not stored in blood serum. When therapeutically effective doses have been administered, the drug is present in serum, cerebrospinal fluid, liver, kidneys, spleen, and pulmonary tissues in antibacterial quantities. The maximal concentration in the blood serum approaches 4 micrograms per cubic centimeter. Since aureomycin causes local irritation, it should never be injected directly into the spinal canal or into the pleural space and it is not yet suitable for nebulization. Toxic effects are minimal, the only frequent one being gastrointestinal irritation. No importance need be attached to the slight alteration in blood coagulability, when the usual therapeutic doses are used.

Herrell condemns the prophylactic use of antibiotics except for the contaminated abdomen, for recurrent rheumatic fever, for oral, intestinal, rectal, or transurethral surgery for patients with organic heart lesions to prevent bacterial endocarditis.

For aureomycin-susceptible infections, 3 capsules (750 mg.) every 6 hours is the recommended dosage for adults, 2 capsules (500 mg.) every 6 hours for children, 1 capsule (250 mg.) for very young children and infants. For urinary infections the doses are smaller. If gastrointestinal irritation develops, 4 cc. of an aluminum hydroxide mixture 15 to 30 minutes after the aureomycin may prevent it, or halving the aureomycin dosage for a short time has been known to relieve nausea and vomiting. If doses continue more than 7 to 10 days, vitamin supplements should be given. Addition of the capsules to the feeding formula being administered by intranasal catheters is satisfactory, if the catheter is attached for about 2 hours. Intravenous dosage, if the drug must be given that way, is 500 mg. dissolved in 250 to 300 cc. of saline solution each 12 hours for adults. A buffer is not necessary. Administration is through an 18-gage needle, taking 15 minutes. The intravenous drip method should never be used for aureomycin, nor should injection into the veins of the lower extremities, since thrombosis is a threat. Two or 3 days is long enough for intravenous injection. The drug is, as yet, totally unsuited for intramuscular injection. It is important when aureomycin is given that the pH of the urine is kept in the acid range.

---

### HYPERTENSIVE-ISCHEMIC LEG ULCERS

Reviewing the scant literature on this entity first observed in 1941, Eugene M. Farber, M.D., and Otto E. L. Schmidt, M.D., add two case histories in *California Medicine*, January, 1950.

Typically, these ulcers appear on or above the lateral malleolus. The size has been reported as small as 1 cm. to as wide in diameter as 10 cm. A painful ulcer develops after slight trauma with first a purplish discoloration which extends at the periphery and breaks down in the center. Healing may take as long as 4 to 6 months, regardless of bed rest. Pressure dressings, supporting bandages, and locally applied antibiotics have been used with a little success. After the healing process begins, the pain departs quickly, ultimately leaving a small, slightly discolored scar.

To support a diagnosis of hypertensive ischemic leg ulcer there should be present hypertension, an ischemic ulcer recalcitrant to treatment, fairly intense pain, and the typical pathological arteriolar sclerotic changes. The ulcer must be differentiated from the lesions of chronic pernio, livedo reticularis, stasis ulcers resulting from chronic venous insufficiency, and "senile skin ulcers."

---

### MYOCARDIAL INTOLERANCE TO EXCESSIVE BLOOD TRANSFUSION

The clinical and experimental observations of William D. Holden, M.D., Jack W. Cole, M.D., and A. Frank Portmann, M.D., reported in *Surgery, Gynecology and Obstetrics*, April, 1950, seem to indicate that the routine prophylactic use of blood transfusion against operative shock is dangerous to patients with a low myocardial reserve. Several with preoperative evidence of damaged myocardia died, first exhibiting hypotension which became aggravated as blood volume increased from the transfusion. Symptoms observed were cyanosis and distention of superficial veins. Postmortem, no acute myocardial infarction was observed, but large dilated hearts, remote myocardial infarcts, marked arteriosclerotic coronary arteries, and venous distention were found.

An experiment was performed with dogs to attempt to determine if the tolerance of greatly increased blood volume was affected by damaged myocardia. Blood for transfusion was obtained from normal dogs, kept incoagulable with heparin, and used within 30 minutes after it was drawn. Records were kept and changes noted of superficial vein distention, cyanosis, salivation, hemoptysis, type of respiration, systemic arterial and central venous

pressures, pulse rate, pulse pressure, and amount of blood transfused. Postmortem examination included observations of the presence of pericardial adhesions, dilatation of the heart, the site of the coronary ligation, the size of the left ventricular myocardial infarct, the degree of passive pulmonary, hepatic, or splenic hyperemia, pulmonary and intraperitoneal hemorrhage, serosanguineous fluid in the peritoneal cavity, and the extent of petechial hemorrhages in the gastrointestinal tract.

The first group of five dogs had no surgery prior to the experiment. The second group of seven had been operated upon successfully a month before with a ligation of the left anterior descending coronary artery distal to the first large branch. The third group of five dogs had the left anterior descending coronary arteries ligated at their origin. Responses were fundamentally similar hemodynamically in all three groups.

All five animals in the third group died in a state of progressive hypotension, bradycardia, and elevated central venous pressure. They displayed no free blood in the peritoneum, as was found in the second group. Pulmonary hyperemia and hemorrhage were marked. There were large left ventricular infarcts and areas of fibrosis.

In the second group in addition to an average 200 milliliters of free blood in the peritoneal cavity were fibrous adhesions between the pericardium and epicardium. Small infarcts were found near the coronary ligation in four animals of the seven. In the remaining three, the occluded arteries had been anastomosed from the right ventricle; one had developed a small infarct in the left ventricle. All these seven hearts were somewhat dilated. The mesenteric and subcutaneous veins were distended. Gastrointestinal tracts contained petechial hemorrhages. Passive hepatic and splenic hyperemia was intense in six dogs.

It was apparent that the animals with damaged myocardia did not tolerate the transfusion of large amounts of blood. Rapid influx of several liters into the circulating blood volume of patients with diffuse coronary arteriosclerosis depleted the myocardial reserve. The authors recommend that the administration of large quantities of blood be used judiciously in accordance with the foregoing clinical and experimental observations.

### MOTOR MANIFESTATIONS OF HERPES ZOSTER

That involvement of the motor nervous system by herpes zoster, either through attacking the anterior horn or the cranial nuclei or through actual disease of the nerves, is not at all unusual is pointed out by S. L. Halpern, M.D., and A. H. Cooner, M.D., in the *Archives of Internal Medicine*, December, 1949. They feel that motor manifestations are an integral part of this disorder and are a result of the basic pathologic process which is described in detail. Many of the motor symptoms, particularly when mild, are overlooked.

It is noted that zoster paresis can occur even without dermatologic manifestations. The commonest motor lesion is facial palsy and this, like other types of motor paresis associated with zoster, is usually transient, lasting weeks to months, but may be permanent. The third, fourth, or sixth cranial nerves may be involved resulting in paresis of one or all ocular muscles, ptosis, or mydriasis. Herpes ophthalmicus usually is associated but may be absent. Other sites of involvement throughout the body are reported and a case of phrenic nerve involvement with permanent paralysis of the diaphragm is described in detail.

MORTON TERRY, B.A., D.O.

### STERNAL MARROW IN PATIENTS WITH METASTATIC CANCER

A study of bone marrow smears obtained by sternal aspiration from thirty-two patients with known or suspected metastatic carcinoma or sarcoma was carried out by P. F. Lanier, M.D., and reported in the *Archives of Internal Medicine*, December, 1949.

The presence of tumor cells in the bone marrow generally was limited to advanced cases. Increase in number of plasma cells, reticuloendothelial cells, and/or eosinophilic elements suggest the presence of metastases.

This study indicates that early diagnosis of metastatic carcinoma can not be routinely made by sternal marrow examination but that the latter may be suggestive in some cases.

MORTON TERRY, B.A., D.O.

## Book Notices

**CLINICAL DIAGNOSIS BY LABORATORY EXAMINATIONS. By John A. Kolmer, M.S., M.D., Dr. P.H., Sc.D., LL.D., L.H.D., F.A.C.P., Professor of Medicine in the School of Medicine and the School of Dentistry of Temple University; Director of the Research Institute of Cutaneous Medicine; Formerly Professor of Pathology and Bacteriology in the Graduate School of Medicine of the University of Pennsylvania. Ed. 2. Cloth. Pp. 1212, with illustrations. Price $12.00. Appleton-Century-Crofts, Inc., 35 West 32nd Street, New York 1, 1949.**

Justly well received in its first edition, this book on clinical interpretations now appears in expanded form, with much new and additional information on laboratory examinations as they pertain to diagnosis. One of the finest features of the first edition was the abundance of diagnostic summary tables, which facilitated the use of the book for students learning and practitioners consulting the book. In the new edition these tables have been listed on an individual contents page, which constitutes quite a convenience for reference purposes. There are fine teaching illustrations, many new. The extensive index in a very practical fashion outweighs the minor disadvantage of the division of subjects so that much is discussed thrice, as the volume is organized by clinical interpretation, practical applications, and the technic of laboratory examinations.

Although this book is thorough enough in its discussion of the diagnostic interpretation of laboratory examinations, leaving the technical details to laboratory specialists, to be vastly valuable to the clinical pathologist, as a specialist and consultant, it also should be introduced to the student of the healing arts, first, because it contains information to round out his education, and second because the sound approach to its subject matter will help dispel the impression that the pathologist's foremost interest is in necropsy.

There is a section of the book containing technics and methods, but this is not a laboratory manual, rather a text based on recognition of the fact that "every practicing physician and surgeon is or should be a clinical pathologist in a broad sense insofar as the interpretation of laboratory examinations is concerned." This is in line with the osteopathic concept that all possible exact scientific tools should be used to assist diagnosis. The book can be recommended most highly to the profession.

**THE PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE. A Text in Applied Physiology. By Charles Herbert Best, C.B.E., M.A., M.D., D.Sc. (Lond.), F.R.S., F.R.C.P. (Canada), Professor and Head of Department of Physiology, Director of the Banting-Best Department of Medical Research, University of Toronto; and Norman Burke Taylor, V.D., M.D., F.R.S. (Canada), F.R.C.S. (Edin.), F.R.C.P. (Canada), M.R.C.S. (Eng.), L.R.C.P. (Lon.), Professor of the History of Medicine and Medical Literature, University of Western Ontario, London, Canada; formerly Professor of Physiology, University of Toronto. Ed. 5. Cloth. Pp. 1,330, with illustrations. Price $11.00. The Williams & Wilkins Company, Mt. Royal and Guilford Avenues, Baltimore, 1950.**

The intervening period since the last edition of this well-known work was published has been one of many advances in medical knowledge. Therefore, this new edition has of necessity undergone considerable revision and expansion, occasionally at the expense of some older material, and justifiably so.

Included among the changes is new information on blood cell cycles; potassium balance in cardiac perfusion; cerebral cortex, subcortical and intercortical connections; and extent of sensory representations.

The type, which was completely reset, is excellent. Many of the older figures have been redrawn, and over 100 more illustrations have been added.

There is, of course, no need for comment on the value of this book, which has been a classic text for many years. It is sufficient to remark that the new edition more than lives up to the outstanding reputation set by the earlier editions.

---

MODERN SURGICAL TECHNIC. By Max Thorek, M.D., LL.D., Sc.D., F.I.C.S., F.B.C.S., D.C.M., Professor of Surgery, Cook County Graduate School of Medicine; Surgeon-in-Chief, American Hospital of Chicago; Founder and Secretary of the International College of Surgeons; Formerly Attending Surgeon, Cook County Hospital; Consulting Surgeon, Municipal Tuberculosis Sanitarium; Honorary Fellow, Surgical Society of Rome, Italy; Honorary Fellow, Piedmont Surgical Society; Fellow, Mexican Academy of Surgery; Honorary Fellow, Peruvian Academy of Surgery; Fellow (Honoris Causa), Royal Surgical Society of Bulgaria; Fellow, National Academy of Medicine, Colombia; Corresponding Member, Société de Chirurgiens de Paris. Ed. 2. Volumes 1 to 4 & Index. Cloth. Pp. 3,170, with illustrations. Price $72.00. J. B. Lippincott Company, East Washington Square, Philadelphia, 1949.

This is a monumental work, a thoroughly revised second edition of an 11-year-old opus in excellent repute. Equally as notable as the comprehensive expansion of material is the admirable ability of the author to assess the respective values of both the up-to-the-minute modern and the not-to-be-discarded classic procedures. He acknowledges his debt to a number of worthy contributors in a few of the more specialized fields of surgery, but his own approach has obviously pervaded these chapters. Each operative procedure is considered only a step in the removal of the pathologic process. Preparation of the patient for surgery, even psychologically, is covered, as well as his care through discharge from the hospital.

Illustrations are abundant. Because of their excellence and the unique clarity with which the book is written, each exposition carries the cohesive continuity implicit in a demonstration performed by a master surgeon and teacher. Any graduate student in surgery will be grateful for these qualities. The historical knowledgeability, wit, and personality of the author add polish to this superb survey, which the mature surgeon will appreciate.

This reviewer has observed a tendency on the part of other reviewers to comment on a "streamlined textbook" . . . "not . . . too voluminous nor too abridged," which seems worthy of mention in connection with four volumes, each of more than 600 pages, plus a separately bound 100-page index. These comments attest the readability of "Modern Surgical Technics."

---

SURGERY OF REPAIR. Principles, Problems, Procedures. By John F. Pick, S.B., M.M., M.D., F.I.C.S., Clinical Assistant Professor of Surgery, University of Illinois Medical School; Member, The American Board of Plastic Surgery; Consulting Plastic Surgeon, Illinois State Penitentiaries. Formerly: Chief Plastic Surgeon, Northington General Hospital, Fourth Service Command, A.U.S., Plastic Surgeon, Shriner's Hospital for Crippled Children, Chicago. Volumes I & II. Cloth. Pp. 828, with illustrations. Price $25.00. J. B. Lippincott Company, 227 S. Sixth Street, Philadelphia, 1949.

Plastic surgery, the newest of approaches still evolving, is, according to Pick, the antithesis of the older, self-defensive, incision-excision-closure therapeusis of separating the pathological from the healthy. It is, rather, the creative reconstruction of the original human pattern. The older surgery has been amputative, what Pick calls "the surgery of despair," while the new surgery based on physiologic restitution he calls "the surgery of repair."

In an optimistic prediction of the future, by extension of contemporary beginnings of progress in chemotherapeutic agents, in knowledge of the genesis of neoplasia, in preventive medicine, et cetera, the ills now plaguing mankind that require medical attention will become rare. However, accidents and injuries still will befall the individual who must live at a rapid pace in a highly mechanized world, possibly at war. There will always be individuals born deformed or defaced. The future of surgery undoubtedly is tied up more in the form and function of the human body than in its disease.

Pick's two volumes are extremely well supplemented with illustrations. These, incidentally, are identified in the index by page numbers in boldface type according to the basic technics they are designed to demonstrate. The charts are excellent. Bibliographies following each chapter are comprehensive. The book is notably complete in the section devoted to procedures and will see much service as an authoritative source. Controversy within the field is discussed frankly. Surgeons will find the chapter on surgical geometrics worth some attention.

---

FUNDAMENTALS OF PSYCHOANALYSIS. By Franz Alexander, M.D., Director, Chicago Institute for Psychoanalysis, Clinical Professor of Psychiatry, University of Illinois. Cloth. Pp. 312. Price $3.75. W. W. Norton Publishing Company, 70 Fifth Avenue, New York City, 1948.

The product of 15 years' lectures on elementary psychoanalysis, this book is one of two volumes which the author is writing in place of a third edition of his earlier work, "The Medical Value of Psychoanalysis." The second volume will be devoted to the psychosomatic approach to medicine.

The concepts outlined in the present book are basically freudian, modified and augmented by the opinions of subsequent researchers in the fields of normal and abnormal psychology, not the least of whom is the author himself. Dr. Alexander writes carefully and clearly, giving many examples which aid in the comprehension of the more abstract principles.

Particularly noteworthy are the chapters on functions of the ego and on psychopathology. In the former, the methods by which the integrating part of the personality affects mental and physical behavior are enumerated and explained; in the latter is described the breakdown of the ego functions and the expression of its failure through the various neuroses and psychoses.

It is a well-known fact that experts in any field, when lecturing on an elementary level, find it difficult to avoid the use of the technical terminology which has become an integral part of their thinking. This is unfortunately the case in the present book, and some knowledge of the jargon of psychiatry on the part of the reader would make for smoother reading. But for this defect, "Foundations of Psychoanalysis" would be unhesitatingly recommended for the student or general practitioner.

---

INTESTINAL INTUBATION. By Meyer O. Cantor, M.S., M.D., F.A.C.S., Assistant Attending Surgeon, Grace Hospital; Formerly, Senior Attending Physician, Deaconess Hospital, Detroit, Michigan. Cloth. Pp. 334, with illustrations. Price $7.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, 1949.

Collecting into one volume all the information available at present concerning this phase of treatment of the intestinal tract, Cantor has written an excellent book, classifying and describing the types of tubes, the technic of intubation, indications for its application, and the responsibility of the surgeon.

He states that the surgeon must be possessed of four attributes. The first is common sense. Throughout the book are pointed out the possibilities of failure that may result from the lack of good judgment. The second is a knowledge of anatomy. The essentials pertinent to intestinal distention he describes. Then comes a knowledge of the physiological principles behind the use of intubation and the patience to permit these principles to work. Fourth is knowledge of physiology and pharmacology.

Successful aftercare of the intubated patient requires the use of what is now known of electrolyte and water balance. Ambulation assists the passing of the tube and the successful maintenance of intubation.

Cantor urges the surgeon to learn the indications and contraindications for intubation. Although certain x-ray studies assist the surgeon, such as plates taken 6 and 24 hours after

passing the tube, Cantor attempts to present the whole subject in such a way that the physician who does not have elaborate hospital equipment and laboratory facilities will be able to use this modern adjunct to gastrointestinal treatment and surgery.

Even though Cantor advises against permitting residents or interns to pass or to withdraw the tubes, it is a common practice in many hospitals. This well-presented material is invaluable for relatively inexperienced doctors whose duties require the performance of these tasks.

---

BONE AND JOINT RADIOLOGY. By Emerik Markovits, M.D., Formerly, Scientific Collaborator of the Central Radiologic Institute of the General Hospital (Holzknecht-Institute), Vienna; Head of the Radiologic Department of Elizabeth Hospital of the City of Budapest; Post Graduate Lecturer at the Central Radiologic Institute of the University of Budapest; Radiologist of the Steiner Cancer Clinic, Atlanta, Ga. Cloth. Pp. 446, with illustrations. Price $20.00. The Macmillan Company, 60 Fifth Avenue, New York, 1949.

This book by an eminent European radiologist should win for him a good deal of commendation and prestige in this country. The osteopathic physician will appreciate his emphasis on the fact that, while x-ray diagnosis in typical cases is not too difficult to establish by x-ray alone, the interpretation of the x-ray to be correct often must be made with the sum of the information available from clinical, anatomical, physiological, and pathological examinations.

The organization of the book is beautiful as are the illustrations—x-ray plates and diagrams. Markovits outlines the anatomy, physiology, and radiologic anatomy of the bones and joints and demonstrates in detail diseases of the bones, the joints, and the muscles and soft tissues, after which he begins again from the standpoint of each regional part and describes and illustrates the pathologic or traumatic conditions which might befall. This latter section of the book is well supplied with differential diagnostic tables and classifications. The author announces a volume on visceral radiology is in preparation, organized along this same pattern of presentation.

---

NEW AND NONOFFICIAL REMEDIES, 1949. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1949. Issued Under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Cloth. Pp. 806. Price $3.00. J. B. Lippincott Company, East Washington Square, Philadelphia, 1949.

This annual volume, edited and sponsored by the Council on Pharmacy and Chemistry of the American Medical Association, is a reliable guide to modern therapeutics. The book lists preparations according to their therapeutic use. Thus there are chapters on Agents Used in Allergy, Analgesics, Anesthetics, Local Anti-Infectives, Cardiovascular Agents, Diuretics, Hematics, Hormones and Synthetic Substances, Serums and Vaccines, Vitamins and Vitamin Preparations, etc. There is a section on tests and standards, a bibliographic index, an index to distributors, and a general index. This book deserves a place on the library shelf of practically every physician.

---

UROLOGICAL SURGERY. By Austin Ingram Dodson, M.D., F.A.C.S., Richmond, Virginia, Professor of Urology, Medical College of Virginia; Urologist to the Hospital Division, Medical College of Virginia; Urologist to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. Ed. 2. Cloth. Pp. 856, with illustrations. Price $13.50. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1950.

"It is the purpose of this book to present and discuss those surgical problems arising in everyday urologic practice. It is not intended as a complete treatise on the diseases of the genitourinary organs, but as an aid in clinical work and as a surgical supplement to the excellent books on principles and practice of urology now in use." So stated the author in his preface to the first edition of "Urological Surgery." The second edition even better satisfies this aim because of its numerous improvements. Several chapters, including those on preoperative and postoperative care, renal tuberculosis, injuries of the kidney, neurogenic disease of the bladder, and ureterointestinal anastomosis, have been rewritten. The operation devised by Foley for exposure of the upper portion of the ureter, and the author's methods of ureterocutaneous and ureterovesical anastomosis have been added. There are also a number of new illustrations, especially in the discussion of carcinoma of the bladder.

Last, but far from least, the chapter on blood transfusions has been replaced by a chapter on the treatment of hemorrhage and shock, providing a much-needed discussion of these important subjects.

---

THE SEXUAL PERVERSIONS AND ABNORMALITIES. A study in the psychology of paraphilia. By Clifford Allen, M.D., M.R.C.P., D.P.M., Physician in Charge of the Psychiatric Department of the Seamen's Hospital, Greenwich; Psychiatrist to the Ministry of Pensions, London. Ed. 2. Cloth. Pp. 346. Price $5.00. Oxford University Press, 114 Fifth Avenue, New York 11, 1949.

This sound and scientific discussion does not describe but rather identifies the paraphilias and develops what is known of their origins and therapy. A notable point of interest is the drawing of parallels from the literature of controlled observation of the sexual development in customs and habit among animals other than the human, particularly other primates.

The author's approach to treatment, always optimistic, apparently is supported by gradually increasing success. He agrees with Rees that prognosis is affected by the age of the patient, the duration of his symptoms, his intelligence, the degree of his desire for cure or change, and his social environment.

It is regrettable that the author's first intention to include and comment on pertinent medical jurisprudence for a number of countries other than his own England was not possible, even 9 years after the publication of the first edition. He emphasizes the need for legal recognition that a person convicted because of a sexual abnormality is convicted for the manifestation of illness, pointing out that court promises of psychiatric treatment rarely materialize.

Allen deplores the dissemination of misinformation so common among those who ought to know better—even physicians. His book should be read and carefully studied.

---

DISEASES OF THE HEART. By Charles K. Friedberg, M.D., Associate Physician, Mount Sinai Hospital, New York; Lecturer in Medicine, Columbia University. Cloth. Pp. 1081, with illustrations. Price $11.50. W. B. Saunders Company, West Washington Square, Philadelphia, 1949.

Writing with clarity, Friedberg has set forth a comprehensive volume to assist cardiac diagnosis and treatment. He has done his work well, emphasizing pathologic physiology in order to impart his own understanding of the dynamic events causing clinical symptoms. There is much to approve in his well coordinated presentation of disease entities. He nowhere has separated vital methods and procedures as if they were isolated fields of knowledge. Electrocardiography, roentgenology, angiocardiography, quantitative measurements of cardiac output, blood volume, extracellular volume, peripheral and intracardiac blood and oxygen concentration and intracardiac pressures, body fluid and tissue electrolytes, and renal and pulmonary blood flow are all related to the diagnosis and treatment of individual cardiac conditions.

Monographic treatment has been afforded circulatory failure, diseases of the coronary circulation, rheumatic heart disease, bacterial endocarditis, congenital heart disease. However, the less common cardiac diseases have been described more extensively than is usual.

This book can be recommended to the interested nonspecialist as well as to the cardiologist. Especially interesting is Friedberg's evaluation of the newer procedures—cardiac catheterization, oxygen and pressure studies, and angiocardiography and the surgical treatment of lesions in coronary artery disease, valvular disease, septal defects, congenital anomalies, tumors, and traumatic insults.

GENERAL ENDOCRINOLOGY. By C. Donnell Turner, Ph.D., Associate Professor of Zoology at Northwestern University. Cloth. Pp. 604, with illustrations. Price $6.75. W. B. Saunders Company, West Washington Square, Philadelphia, 1948.

Here is a commendable presentation of endocrinology for students. Instead of the usual clinical point of view, the experimental approach has been used, directed to the function of the mechanisms of chemical coordination in plants, invertebrates, and vertebrates. Thus, Turner has written a textbook of biologic science rather than a medical science, for the purpose of demonstrating biologic principles such as are appropriate for the background knowledge of an intelligent layman. As an introduction to the basic concepts of biology, it is excellent.

From this, it should not be gathered that any attempt to popularize scientific information has been made. Nevertheless, the book can be recommended by the doctor to patients who are interested in acquiring such knowledge and are willing to read material presented for college-level minds. It is a very readable volume with no nonsensical intellectual condescension. Turner assumes the student or lay reader has the equivalent background to a year of zoology, a quarter of comparative vertebrate anatomy, and some organic chemistry.

The bibliographies following each chapter are exhaustive, particularly for monographs and periodical literature, in the event the reader wishes to check the basis for an opinion, to follow procedures more closely, or to read both sides of a controversial question.

Figures are original, for the most part, from first-hand dissection and histological preparations. The captions are so complete and succinct as to be a lesson in good pedagogy.

---

A TEXTBOOK OF SURGERY by American Authors. Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Professor of Surgery, Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. Ed. 5. Cloth. Pp. 1550, with illustrations. Price $13.00. W. B. Saunders Company, West Washington Square, Philadelphia 5, 1949.

Contemporaneous principles of surgery, tested and accepted, with the etiology, pathology, and proper surgical therapy, form the basis of this standard textbook. The fifth edition has been considerably expanded by entirely new contributions along with the necessary and desirable revisions within the various sections.

The collaboration method of collecting authoritative treatises in each surgical field, as edited by Frederick Christopher, has resulted in a surprisingly well integrated volume.

Several sections of the book distinguish it from the usual textbook on surgery, most particularly a part treating quite fully bacterial, fungus, and virus diseases in which tetanus, anthrax, tularemia, actinomycosis, blastomycosis, coccidioidal granuloma, and rabies, with recommendations for surgery when it is indicated and admonitions against it in the light of present knowledge. The section devoted to preoperative and postoperative care is well summarized and the discussion of shock, acidosis, alkalosis, and water and electrolyte balance is likewise. Primarily the book is intended for students and interns.

---

RECENT ADVANCES IN PHYSIOLOGY. By W. H. Newton, M.D., M.Sc. (Manch.), D.Sc. (Lond.) Professor of Physiology in the University of Edinburgh. Ed. 7. Cloth. Pp. 269, with illustrations. Price $4.50. The Blakiston Company, 1012 Walnut Street, Philadelphia 5, 1949.

These essays on temperature regulation, water diuresis, digestion, the physiology of pregnancy, blood pressure and the kidneys, catheterization of the heart, electrical excitation of nerve, cutaneous sensation, auditory impulses, and color vision are a good introduction to students who have the basic facts of physiology and wish to go into the formidable original papers. This is largely due to a conscientious review of the literature and really capable selection of the pertinent and interesting. As the author says, the book should be called *"Some* Recent Advances." It has been 10 years since the sixth edition was printed. The material is entirely new.

---

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY. By Robert L. Faulkner, M.D., F.A.C.S., Assistant Professor of Gynecology, The Western Reserve Medical School; Associate Gynecologist, University Hospitals of Cleveland, Ohio, and Marion Douglass, M.D., Formerly Assistant Professor of Gynecology, The Western Reserve Medical School. Ed. 2. Cloth. Pp. 358, with illustrations. Price $8.75. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

Regardless of the interest and attraction of the subject of pathology as it affects a specialty such as obstetrics and gynecology, few specialists can afford the additional time it would take to augment their knowledge by a year or two of study in pathology. Indeed, there are only a few institutions where such instruction is available. The carefully revised edition of this straightforward, unassuming text is appropriate for classwork and for those specialists who need a not too detailed review of the histology and pathology of the female generative organs. The range of normal variations in these organs is wide. Slight endocrine imbalance can effect gross morphological change. Inflammation and neoplasia are frequent. With few exceptions the book has been limited to discussions of the types of abnormalities most likely to be witnessed.

As the authors say, "The well-informed specialist in this field must have considerable knowledge of gross pathology, a modicum of information about laboratory methods, what knowledge he may of microscopic pathology, and, most important of all, what may be spoken of as the surgical pathologist's point of view."

---

## ACADEMY OF APPLIED OSTEOPATHY COURSES

The Academy of Applied Osteopathy presented its fifth course in Basic Osteopathy in New York City April 3-6. These courses are designed to bring the physician in general practice the latest advancements in the application of the osteopathic concept. They run for 4 days and are limited to eighteen registrants. There are three instructors for each course who are practicing physicians with years of practice and who are able to present material and technics in a uniform and authoritative manner. A course was scheduled to be given at Fort Worth, Texas, May 1-4 and another will be given May 31-June 3 at the Winthrop Hotel, Tacoma, Washington, preceding the annual Northwest Osteopathic Conference.

---

## ANNUAL CLINICAL REVIEW COURSE AT KIRKSVILLE COLLEGE

The program of the Annual Clinical Review Course at the Kirksville College of Osteopathy and Surgery, Kirksville, Mo., June 11-13, will include the following: "Comparison of Structural Abnormalities in Children and Adults," Wallace M. Pearson, Kirksville; "An Evaluation of the Sciatic Syndrome," C. Robert Starks, Denver; "Osteopathic Management of Hypertension," Thomas L. Northup, Morristown, N. J.; "Surgical Diagnosis for the General Practitioner," Paul R. Koegler; "Diagnosis and Treatment of Syphilis by the General Practitioner," Herman T. Still; "The Clinical Consultant and the General Practitioner," William C. Kelly; "Prophylactic Use of Forceps and Rotation from the Posterior Position with Forceps," Martin L. Riemann; "Conservative Management of Fractures," Donald Siehl; "Conservative Management of Arthritis," David A. Gardner; "Common Endocrine Problems," C. A. Rohweder; "Clinical Implications of Research," I. M. Korr, Ph.D.; "Acute Poliomyelitis," Max T. Gutensohn; "Public Health and the General Practitioner," Vernon H. Casner; and "Modern Management of Heart Disease," Frederick V. Hetzler, all of Kirksville.

# Conventions and Meetings

## Announcements

American Osteopathic Association, Fifty-Fourth Annual Meeting, Chicago, July 10-14, inclusive. Program Chairman, C. R. Nelson, Ottawa, Ill.

Academy of Applied Osteopathy, Stevens Hotel, Chicago, July 14, 15.

Advisory Board for Osteopathic Specialists, Stevens Hotel, Chicago, July 9-11.

American Association of Osteopathic Colleges, Stevens Hotel, Chicago, July 7, 8.

American College of Neuropsychiatrists, Macon, Mo., July 6-8.

American College of Osteopathic Internists, Continental Hotel, Kansas City, Mo., October 23-26. Program Chairman, Stuart Harkness, Des Moines, Iowa.

American College of Osteopathic Surgeons, Hotel Savery, Des Moines, Iowa, October 15-19. Program Chairman, Howard A. Graney, Des Moines, Iowa.

American Osteopathic Academy of Orthopedics, Hotel Savery, Des Moines, Iowa, October 15-19. Program Chairman, Harry F. Shaffer, Detroit.

American Osteopathic College of Radiology, Hotel Savery, Des Moines, Iowa, October 15-19; Board of Governors, October 11. Program Chairman, D. W. Hendrickson, Wichita, Kans.

American Osteopathic Hospital Association, Hotel Savery, Des Moines, Iowa, October 15-19. Program Chairman, Mr. Edward C. Barron, Detroit.

American Society of Osteopathic Anesthesiologists, Hotel Savery, Des Moines, Iowa, October 15-19. Program Chairman, Crawford M. Esterline, Kirksville, Mo.

Association of Osteopathic Publications, Stevens Hotel, Chicago, July 8.

Auxiliary to The American Osteopathic Association, Stevens Hotel, Chicago, July 10-14.

British Columbia: See Northwest Osteopathic Conference.

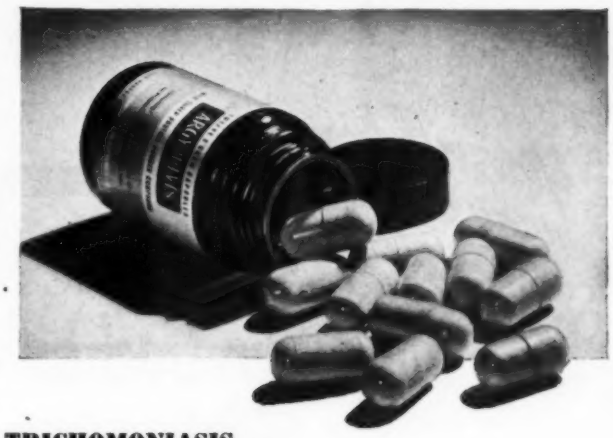
Florida, Bradenton, May 14-16. Program Chairman, W. S. Horn, Palmetto.

Idaho: See Northwest Osteopathic Conference.

Kansas, annual convention, Allis Hotel, Wichita, October 1-4. Program Chairman, Irwin J. Conant, Meriden.

Kentucky, Brown Hotel, Louisville, October 11, 12. Program Chairman, Martha Garnett, Louisville.

Maine, annual meeting, Samoset Hotel, Rockland, June 29-July 1. Program Chairman, Marshall J. Gerrie, Pittsfield. Semi-annual meeting, Bangor, December.

TRICHOMONIASIS

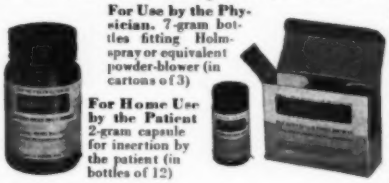
results 98% EFFECTIVE*

with ARGYPULVIS

*Report of Reich, Button and Nechtow in *Surgery, Gynecology and Obstetrics*... (See coupon offer.)

No more effective treatment has been developed than this simplified procedure ... made possible with the newest adaptation of the always dependable ARGYROL. In the ARGYPULVIS technique for better control of Trichomoniasis, the same powder used in office treatment is available in capsule form for supplemental home use. So ... for effective treatment and better control ... use and prescribe ARGYPULVIS.

...in two convenient forms



For Use by the Physician. 7-gram bottles fitting Holm-spray or equivalent powder-blower (in cartons of 3)

For Home Use by the Patient 2-gram capsule for insertion by the patient (in bottles of 12)

INTRODUCTORY TO PHYSICIANS: *On request we will send professional samples of ARGYPULVIS (both forms), together with a reprint of the Reich, Button and Nechtow report. (Use coupon.)

A. C. Barnes Company
Dept. AO-40, New Brunswick, N. J.

Name .....
Address .....
City ..... State .....

ARGYPULVIS ARGYROL and ARGYPULVIS are registered trademarks, the property of A. C. BARNES CO., NEW BRUNSWICK, N. J.


Michigan, annual meeting, Civic Auditorium, Grand Rapids, October 2-5; House of Delegates, October 1, 2. Program Chairman, Ralph F. Kraker, Ann Arbor.

Missouri, St. Louis, October 12-14. Program Chairman, Theodore Corcanges, Raytown.

Montana, Northern Hotel, Billings, June 5-7. Program Chairman, T. G. Gunderson, Billings.

Nevada, Reno, May 6-7.

New Mexico, El Rancho Hotel, Gallup, September 14-16. Program Chairman, William D. Andrews, Albuquerque.

New York, Hotel Marcy, Lake Placid, October 13, 14. Program Chairman, Charles K. Smith, Elmira.

North Carolina, Winston-Salem, May 27.

North Dakota, Rudolph Hotel, Valley City, May. Program Chairman, Harry Homewood, Valley City.

Northwest Osteopathic Conference (Washington, Oregon, Idaho, and British Columbia Osteopathic Associations), Winthrop Hotel, Tacoma, June 5-8. Program Chairman, E. D. Mosier, Puyallup, Wash.

Oklahoma, Biltmore Hotel, Oklahoma City, November 7-9. Program Chairman, Daniel B. Heffelfinger, Oklahoma City.

Oregon: See Northwest Osteopathic Conference.

Osteopathic College of Ophthalmology and Otorhinolaryngology, Ambassador Hotel, Los Angeles, November 1-3. Board of Trustees of the College and

TODAY
You will have many occasions for prescribing
Bacitracin Troches
CSC
Widely Antibacterial. Bacitracin Troches-C.S.C. are destructive for many pathogens that abound in the mouth and pharynx. Containing 1,000 units of bacitracin each, they lead to extremely high bacitracin salivary levels.
Virtually Nonallergenic. One of the most serious drawbacks to topical oral antibacterial therapy—allergic reactions—is largely eliminated by Bacitracin Troches-C.S.C.
Patient Acceptance. The confection-like taste of Bacitracin Troches-C.S.C. encourages their continued use not only by adults but also by children. They remain intact in the mouth for approximately one hour, thereby exerting a prolonged therapeutic influence.
IN ACUTE PHARYNGITIS AND GINGIVITIS
C.S.C. Pharmaceuticals
A DIVISION OF COMMERCIAL SOLVENTS CORPORATION, 17 EAST 42ND STREET, NEW YORK 17, N.Y.

American Osteopathic Board of Ophthalmology and Otolaryngology, October 30, 31. Program Chairman, Edward W. Davidson, Los Angeles.

Osteopathic Cranial Association, Stevens Hotel, Chicago, July 15, 16.

Osteopathic Women's National Association, Stevens Hotel, Chicago, July 10, 12.

Pennsylvania, annual meeting, Bellevue-Stratford Hotel, Philadelphia, September 22-24. Program Chairman, Charles M. Worrell, Palmyra.

Society of Divisional Secretaries, Stevens Hotel, Chicago, July 8.

South Carolina, Wade Hampton Hotel, Columbia, May.

ter, June 4-6. Program Chairman, M.

South Dakota, State Game Lodge, Cus- C. Thompson, Watertown.

Tennessee, Andrew Jackson Hotel, Nashville, October. Program Chairman, Richard Alexander, Greenback.

Vermont, Rutland, October 4, 5. Program Chairman, M. C. Smith, Bennington.

Virginia, Williamsburg, June 2-3. Program Chairman, Harold A. Blood, Alexandria.

Washington: See Northwest Osteopathic Conference.

Western States Osteopathic Society of Proctology, Biltmore Hotel, Los Angeles, September 25-27. Program Chairman, Lee R. Borg, Los Angeles.

## OFFICIAL AND AFFILIATED ORGANIZATIONS

### ARIZONA

#### Maricopa County

The officers are: President, Homer E. Allshouse; vice president, Russell Peterson. Both are from Phoenix.

The trustee is Paul Bramnick, also from Phoenix.

At the meeting held in Phoenix on March 12, James M. Roney, Ph.D., talked on "Insecticides As They Affect Man."

#### Tucson

A meeting was held March 1 in Tucson, at which time a film from the American Osteopathic Association was shown.

### CALIFORNIA

#### Alameda County

Wayne Peyton, Sacramento, spoke on modern pediatrics at the meeting March 14.

#### Monterey Peninsula

Karl L. Albaeck, Glendale, presented a talk on "Headaches" at the March meeting in Loma Linda.

Pediatric problems were discussed by Margaret W. Barnes, Chicago, at the February meeting in Watsonville.

#### San Diego County

Medicine as practiced before and during the war in England was discussed by Viola M. Frymann, La Jolla, at the meeting March 13.

#### San Gabriel Valley

New applications of x-ray and a film, "Exploring with X-Ray," were presented at the February 16 meeting in San Marino by Mr. William A. Mayer.

#### Southside

William W. W. Pritchard, Los Angeles, is scheduled to speak on "Osteopathic Manipulation" at the meeting June 1.

### COLORADO

#### Northern

The officers are: President, M. S. Cherwin, Longmont; vice president, Robert W. Trethewey, Loveland, and secretary-treasurer, George B. Nahrgang, Boulder.

The trustees are C. Robert Patterson, Ault, and Daniel K. McCrea, Greeley.

A film, "Communicable Diseases," was shown at the meeting March 15 in Fort Collins.

A meeting was scheduled to be held in Greeley April 14.

### FLORIDA

#### State Society

Officers were listed in the August, 1949, JOURNAL.

Committee chairmen are: Professional affairs and hospitals, Hugh T. Kirkpatrick, Pass-a-Grille Beach; special membership effort, Dominic Raffa, Tampa; conventions, Emery G. Pierce, Bradenton; convention programs, W. S. Horn, Palmetto; convention publicity and ethics and censorship, William E. White, Jr.; convention entertainment, Harold V. Pierce; ladies' entertainment, Mrs. Harold V. Pierce, the latter three of Bradenton; public affairs, legislative, and national defense, Louis J. Larmoyeux, Jacksonville; health insurance, Edmund T. Flynn, Tallahassee; veterans' affairs, Charles C. Hillyer, Jacksonville; and vocational guidance, George W. Frison, De Land.

#### St. Petersburg

The officers are: President, Paul J. Dodge; vice president, A. B. Patterson, and secretary-treasurer, O. Lamson Beach, all of St. Petersburg.

A meeting was scheduled for March 14 with George S. Rothmeyer, St. Petersburg, as speaker.

A meeting was scheduled for February 21, with Charles C. Reid, Denver, speaking on "Teaching and 50 Years of Osteopathy."

**GEORGIA**
**State Society**

Scheduled speakers for the annual meeting May 12-13 in Thomasville are Byron E. Laycock, Des Moines, Iowa, and Grover N. Gillum, Kansas City, Mo.

**ILLINOIS**
**First District**

H. Dale Pearson, Erie, Pa., addressed the March 9 meeting in Chicago.

**Fourth District**

William J. Loos, Chicago, was guest speaker March 16 in Bloomington.

**Fifth District**

At the meeting in Mattoon on March 19 William J. Loos, Chicago, presented a talk on "The Mechanisms of Edema."

The officers are: President, Roy E. King, Homer; vice president, Charles J. Cunningham, Villa Grove; secretary-treasurer, Merritt F. Speltz, Bement. The program chairman is John N. Cunningham, Tuscola.

**Eighth District**

Mr. Albert Gardner, Chicago, spoke at the meeting February 19 in Vandalia.

**IDAHO**
**Boise Valley**

"Appendicular Lesions" was the subject of a lecture by Arthur S. Cudmore, Boise, February 16 in Nampa.

**INDIANA**
**State Society**

Among the features of the annual meeting in Indianapolis May 7-9 were scheduled a discussion of cardiac and coronary research and x-ray technic by Irvin M. Korr, Ph.D., and Donald Siehl, both of Kirksville, Mo.; a talk by Albert F. Kull, South Bend; and a report on dorsal and lumbar technic by Howard E. Gross, Kirksville, Mo.

**IOWA**
**State Society**

The following addresses are scheduled for the annual meeting May 15-16 in Des Moines: "Osteopathy at the Federal Level," E. F. Peters, Ph.D.,; "X-Ray Interpretation of Bone Pathologies," T. Bruce Farmer and Henry J. Ketman; "Neurology of Cranial Osteopathy," Paul E. Kimberly; "Osteopathic Technic," Byron E. Laycock; "Osteopathic Concept in Certain Metabolic Diseases," Stuart F. Harkness, all of Des Moines; "Tested Methods of Public Relations," Mr. Harve Lamont Smith, Highland Park, Mich., and "The Fundamental and Practical Aspects of Research Dealing with the Osteopathic Lesion, Its Characteristics, Diagnosis, and Treatment," J. S. Denslow and I. M. Korr, Ph.D., Kirksville, Mo.

An anatomy demonstration is to be set up by the Des Moines Still College for the duration of the meeting.

**Scott County**

The officers are: President, Donald F. McDonough; vice president, Theodore M. Tueckes, and secretary-treasurer, Charles D. Schultz (re-elected). All are from Davenport.

**KANSAS**
**Eastern**

A meeting was scheduled to be held in Ottawa in March.

new
steroid therapy for
**ARTHRITIS**

*pregnenolone*
(ENELONE, Funk)

Pregnenolone (ENELONE, Funk) has been reported to produce remission of symptoms in some cases of rheumatoid arthritis... producing relief of pain, increased muscle strength, and restored general vigor and well-being.

Limited clinical work, requiring further corroboration, emphasizes these advantages of ENELONE:

effective orally, *as well as parenterally*

much less expensive—*costs but a fraction as much as cortisone or* ACTH

*toxic effects are rare*

*highly purified, stable, rigidly standardized*

**ENELONE**
**TABLETS,**
each containing
**100 mg.**
**pregnenolone acetate**
bottles of
24 and 100

**ENELONE**
**INJECTABLE**
aqueous crystalline suspension of
**pregnenolone**
**100 mg. per cc.**
in 10 cc. vials

**CASIMIR FUNK LABORATORIES, INC.**
affiliate of U. S. VITAMIN CORPORATION
250 E. 43rd St. • New York 17, N. Y.


**Mid-Kansas**

B. L. Gleason, Larned, spoke about "Goiter" at the March 8 meeting in Lyons.

**Northeast**

A meeting was held in Horton March 8.

**Sedgwick County**

Miss Pat Gigan spoke on "Conditions in England" at the meeting March 6 in Wichita.

**South Central**

Professional affairs were discussed at the meeting March 16 in Myers.

**Southeastern**

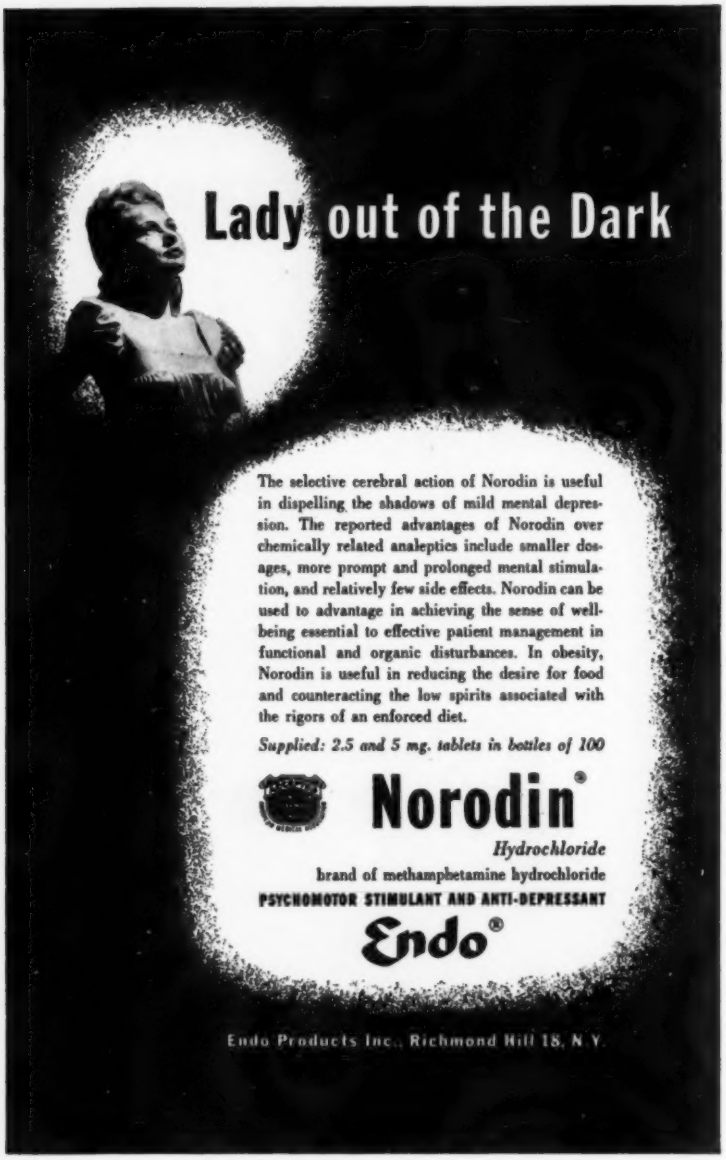
L. R. Morgan, Joplin, Mo., lectured and conducted a round table discussion concerning "Toxemias of Pregnancy" March 16 in Girard.

**Wyandotte County**

A meeting was held March 1 in Kansas City.

**MAINE**
**State Society**

Speakers who were to appear on the program for the seminar on obstetrics and gynecology April 14-15 in Waterville were: Marshall J. Gerrie, Pittsfield; Earl H. Gedney, Waldo B. Miller, John L. Crowther, William E. Gifford, all of Bangor; Louis Farley, Harry J. Petri, Lowell M. Hardy, Vernon H. Lowell, Edwin E. Morse, Granville C. Shibles, all of Portland; Elmer I. and Leda R. Whitney, Oakland, and Edward G. Drew, Waterville. According to the advance announcement, John Denby, Farmington, was to be moderator.


Lady out of the Dark
The selective cerebral action of Norodin is useful in dispelling the shadows of mild mental depression. The reported advantages of Norodin over chemically related analeptics include smaller dosages, more prompt and prolonged mental stimulation, and relatively few side effects. Norodin can be used to advantage in achieving the sense of well-being essential to effective patient management in functional and organic disturbances. In obesity, Norodin is useful in reducing the desire for food and counteracting the low spirits associated with the rigors of an enforced diet.
Supplied: 2.5 and 5 mg. tablets in bottles of 100
Norodin®
Hydrochloride
brand of methamphetamine hydrochloride
PSYCHOMOTOR STIMULANT AND ANTI-DEPRESSANT
Endo®
Endo Products Inc., Richmond Hill 18, N.Y.

Moving pictures on the program were "Resuscitation of the New Born" and "Physiology of Fertilization in the Human Female."

### MASSACHUSETTS

#### State Society

The officers were reported in the March JOURNAL.

The committee chairmen are: Ethics and censorship, Charles W. Sauter, II, Gardner; professional and public visual education, Raymond O. Johnson, Brockton; membership, Frank Berg, Malden; general convention, John Robertson, Arlington; convention program and public clinics, Vincent N. Hammersten, Newton Highlands; exhibits and editorial contacts, Robert R. Brown, Belmont; entertainment, Mildred E. Greene, Waltham; state legislation, Raymond W. Boyd, Lynn; radio, Richard A. Montague, Concord; vocational guidance, H. Earle Beasley; public relations, Nelson D. King, the latter two of Boston; professional and public welfare, Charles W. Wood, Holyoke; veterans' affairs, Francis E. LeBaron, Foxboro; Osteopathic Progress Fund, Amos P. Clarkson, and education, Laurence W. Osborn, both of Worcester.

#### Connecticut Valley

Paul M. Brose, Holyoke, was the speaker at the meeting March 21 in Holyoke. His subject was "Lesions of the Thoracic Cage and Their Corrections by the Respiratory Technic."

### MICHIGAN

#### State Society

The program announced in advance for the annual spring refresher course in Detroit, April 14 and 15 included sound films on "Regional Anesthesia," "Heart's Circulation of Blood," and "Bronchial and Pulmonary Lesions." Addresses scheduled were: "Anesthesia for the General Practitioner," Mahlon L. Ponitz; "Medical, Moral, and Legal Offenses," Tyrone Gillespie, LL.B.; "Lesions of Cervix and Vaginal Tract," B. F. Dickinson; "Differential Diagnosis of Bronchogenic Carcinoma," Donald J. Evans; "Differential Diagnosis of Jaundice," Neil R. Kitchen, all of Detroit; "Role of Intestinal Function in Health and Disease," Mr. Stewart Farr, Kalamazoo; "Cardiological Problems in General Practice," Howard Gault, Grand Rapids; "Public Relations," Mr. Harve Lamont Smith, Highland Park; an informal manipulative session with "Spinal Technic," W. Powell Cottrille; "Spinal Technic," Alan R. Becker, both of Jackson; "Appendicular Technic," William A. Ellis, Grand Rapids; a panel discussion on "The Role of the Physician in the Development of Human Behavior," with "Developmental Child Psychology," Marie P. Skodak, Ph.D., Flint; "Developmental Adolescent Psychology," William Wattenberg, Ph.D., Detroit; "Abnormal Adult Psychology," Max L. Hutt, Ph.D., Ann Arbor; and reports by E. H. McKenna, Chicago, and Ira C. Rumney, Ann Arbor.

#### Central

A meeting was scheduled to be held March 9 at St. Johns.

L. M. Monger, Grand Rapids, spoke at the meeting February 15 in Belding on "Peptic and Duodenal Ulcers," including also a discussion of new technics in gallbladder surgery.

#### Kalamazoo Tri-County

C. R. Nelson, Ottawa, Ill., gave the principal address at the meeting March 16 in Kalamazoo, his subject being "Postural and Body Mechanics and Their Relation to Health."

#### Northwestern

The officers were reported in the March JOURNAL.

The committee chairmen are: Membership, George K. Green, Elk Rapids; ethics and convention program, Wallace S. Willman; hospitals, B. W. Green; statistics, Paul S. Bates; convention arrangements, Frank S. Thomas; legislation, E. William Stack; vocational guidaance, Ralph W. Dorman; public health, industrial and institutional service, and public relations, M. O. Johnson, all of Traverse City, and clinics, Wilson L. Brott, Detroit.

#### Western

The officers were reported in the March JOURNAL. A partial listing of the committee chairmen appeared in the April JOURNAL.

Other committee chairmen are: Ethics, Gerald J. Brower; statistics, H. T. Blohm; legislation, Hiram R. Nutt; vocational guidance, Sterling A. Maxfield; public relations, Mr. H. C. Parsons; department of x-ray, Walter G. Thwaites, all of Muskegon; social welfare, Herbert A. Walters, North Muskegon, and

hospitals and intern and public health, Frank E. Durnell, Muskegon Heights.

### MISSOURI

**State Society**

A 2-day annual conference was held on February 15 and 16 in Jefferson City for presidents, secretaries, and district county chairmen of the association.

**Buchanan County**

A joint meeting was held with the Northwest Missouri association in St. Joseph on February 10. Short talks were given by C. F. Warren, Marshall; Mr. Lawrence D. Jones, Jefferson City, and Mrs. J. R. Dougherty, Vandalia.

**Central**

Joyce N. Stewart, St. Louis, spoke on ruptured intervertebral disks at the meeting March 15, in Centralia.

A meeting was held February 20 in Moberly.

**Jackson County**

Mr. C. S. Robinson was scheduled to speak at the meeting to be held in Kansas City February 21.

**North Central**

C. F. Warren, Marshall, and Mr. Lawrence D. Jones, Jefferson City, were the principal speakers at a meeting in Chillicothe on February 9.

**Northeast**

The professional program was given by C. F. Warren, Marshall, Mr. Lawrence D. Jones, Jefferson City, and Mrs. J. R. Dougherty, Vandalia, at the meeting March 16 in Kirksville.

**Northwest**

See Buchanan County.

**Osage Valley**

March 9, in Jefferson City, C. F. Warren, Marshall, spoke as part of his official visit to the district.

**St. Louis**

A meeting, with C. F. Warren, Marshall, speaking on the control of heart disease, was scheduled for February 21.

**Southeast**

Charles C. Reid, Denver, talked on "A Survey of Modern Treatments Given by Some Osteopathic Physicians" at the meeting March 12 in Perryville.

**Southwest**

Charles A. Povlovich, Kansas City, spoke on "Federal Recognition in Branches of the Military Services" at a meeting held in Carthage on February 24.

**West Central**

The district society met for the official visit of C. F. Warren, Marshall, and Mr. Lawrence D. Jones, Jefferson City, in Sedalia March 23.

### NEW JERSEY

**State Society**

The officers are: President, Walter H. Miller, Bloomfield; president-elect, George S. Gardner, Spring Lake Heights; vice president, Harry F. Mintzer, Woodlynne; executive secretary, Mrs. Sarah M. Sanderson (re-elected), Trenton; secretary, John H. Beckman (re-elected), Caldwell; treasurer, William C. Bugbee (re-elected), Montclair; sergeant-at-arms, Leonard Fagan, Burlington, and speaker, G. Woldemar Weiss, Montclair.

The district directors are: First, Willard W. Reger, Newton; Second, J. Raymond McSpirit, Teaneck; Third, Herbert E. Ulrich, Short Hills, and Mortimer J. Sullivan, Montclair; Fourth, Daniel J. Harkins, Elizabeth; Fifth, Dr. Gardner; Sixth, Kirk L. Hilliard, Pleasantville; Seventh, Ralph W. Davis, Jr., Audubon, and Eighth, John E. Devine, Ocean City.

Committee chairmen are: Finance, Dr. Bugbee; department of internal affairs, Dr. Gardner; bureau of professional development, George W. Northup, Morristown; professional education, Dr. Sullivan; ethics, Dr. Ulrich; meetings, Bernard J. Plone, Riverside; programs, Dr. Mintzer; facilities, Rocco Cleffi, Dover; college liaison, Guy W. Merryman, Collingswood; statistics and locations, Howard I. Van Dien, Madison, and E. C. Hall, Hackettstown; bureau of organizations, Dr. McSpirit; membership, New Jersey, Dr. Bugbee; membership, A.O.A., Dr. Northup; membership insurance, Dr. McSpirit; editorial, Edward H. Johnson, Montclair; charters, and constitutions and bylaws, Dr. Weiss; department of public relations and bureau of public education on health, Harry A. Sweeney, Atlantic City; national unit contact, James E. Chastney, Hackensack; state unit contact, Dr. Devine; licensure and registration, Charles A. Furey, Cape May; institutions and agencies, Frank A. Dealy, Sea Isle City; public health and compensation insurance, John D. Dennis, Orange; veterans' affairs, Francis L. Rossell, Haddonfield, and Herbert R. Talmage,

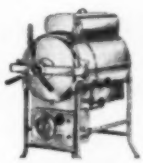

Choose from the Line That's COMPLETE

*The* PELTON *line affords the widest selection of private office sterilizers offered by any manufacturer:*

***Portable Sterilizers,*** 8 to 20 inches, automatic or manual control, bright or satin chrome finish.

***Cabinet Models*** featuring enamel or laminated tops, with or without timer, double or single door . . . all with interior illumination.

***Autoclaves*** with selective temperature control at no extra cost.



***Water Sterilizers*** in 2- and 5-gallon sizes.

*Price conscious or luxury minded, your logical choice is* PELTON. *Write for complete details.*

PELTON PROFESSIONAL EQUIPMENT SINCE 1900

THE PELTON & CRANE CO., DETROIT 2, MICH.

**Whether your patients are short, heavy weight, aged or crippled, they can get on a Ritter Multi-Purpose Table easily. With a light toe pressure this motor driven table can be lowered to 23″ from table top to floor. There is no physical strain for you and patients appreciate this convenience. Another touch of the toe on the motor control pedal and the patient is in position ready for treatment. Consider, too, these other features of the Ritter Multi-Purpose Tables:**

- **Extreme high and low positions—The Ritter Multi-Purpose Table Model A, Type 1, is available in two ranges 27″-45″ or 23″-41″ (top of table to floor). You work at ease either standing or sitting.**
- **Flexible adjustments—Head, back, seat and foot sections easily adjusted to any required position—full horizontal to chair. Rotates 180°. Tilts 33° head low position, 5° foot low position.**
- **The Ritter Multi-Purpose Table Model A, Type 2, is particularly adaptable to proctological work with adjustable knee rest on the foot section. Low position 31″, high position 49″ . . . extreme tilt 55°.**
- **Your surgical dealer will gladly demonstrate these features of the Ritter Multi-Purpose Tables.**

FOR ADVANCED EQUIPMENT LOOK TO **Ritter** COMPANY INCORPORATED RITTER PARK, ROCHESTER 3, N.Y.

Irvington; bureau of public information, and newspaper, periodicals, and radio, David S. Steinbaum, Bayonne; speakers, Dr. Northup; student selection and guidance, Dr. Merryman; Osteopathic Progress Fund, Richard Feige, East Orange; public and professional welfare, Dr. Devine; home building fund, Vernon F. Still, Elizabeth; bureau of professional services, Fannie G. Gardner, Spring Lake Heights; hospitals and clinics, Henry Palmaffy, South Orange; organizational contacts, Edwin T. Ferren, Camden; labor, Charles E. Jones, Nutley; industry, Dr. Dennis; institutions, H. Allen Fellows, Merchantville; public health and sanitation, H. Thurston Maxwell, Morristown; maternal, infant, and child care, Robert Saber, Maplewood; osteopathic school physicians, Robert H. Powell, Pitman; nominating, Dr. Ulrich; grievance, Lewis L. Walter, Atlantic City; president's advisory, Dr. Davis, and central office property, Leon Cohen, Trenton.

#### State Society Auxiliary

The officers are: President, Mrs. H. I. Van Dien, Madison; president-elect, Mrs. David S. Steinbaum, Bayonne; first vice president, Mrs. Lewis E. Nelson, Union, and second vice president, Mrs. George Dean, Montclair.

#### Bergen-Passaic County

J. Barton Freedman, Lawrence, Long Island, N. Y., delivered a talk, "A High Protein Dietary Approach to the Problem of Metabolic Allergic Diseases in General Osteopathic Practice," at the March 3 meeting.

#### Essex County

Rita Finkler, M.D., Newark, is scheduled to speak on "Thyroid Diseases" at the meeting May 24.

"New Postural Approach" was the topic of a talk by Warren A. Pratt, Upper Darby, Pa., at the meeting April 12, according to an advance announcement.

### NEW YORK

#### Central

Mr. Albert J. Amsterdam talked about orthopedic braces at the March 9 meeting in Syracuse.

#### City of New York

"The Differential Diagnosis of Acute Surgical Emergencies" was the subject scheduled to be discussed at the meeting March 15 by Ralph P. Baker, York, Pa.

#### Western

A technical film, "Cancer Detection and Diagnosis," was scheduled to be shown at the meeting March 8 in Buffalo.

### NORTH CAROLINA

#### State Society

The officers were reported in the August JOURNAL.

The committee chairmen are: Legal and legislative, Talmage T. Spence, Raleigh, and veterans' affairs, S. W. Hoffman, Statesville.

### OHIO

#### State Society

According to an announcement received in advance, the program for the annual meeting in Columbus, April 30-May 3 scheduled a symposium on "Shoulder Problems," by Roger E. Bennett, Middletown, and a symposium on pitfalls in practice which included "Pitfalls in Prescription Writing," Mr. Ray T. Quillen; "Pitfalls in the Diagnosis of Diabetes," Lloyd O. Wilkins, Akron; "Pitfalls in the Diagnosis of Continued Fever," and "Pitfalls in the Diagnosis of Persistent Cough," both by Louis Mark, M.D. A third symposium on malignancy included "The Roentgenologist's Contribution," Theodore C. Hobbs; "The Orthopedist's Contribution," Harold E. Clybourne; "The Osteopathic Internist's Contribution," Frank R. Spencer, and "The Contribution of a Surgeon," James O. Watson, all of Columbus.

Other lectures to be given were "Diagnosis and Therapeutics of Virus Disease," Ralph D. Ladd;" Rectal Bleeding," Randall O. Buck, both of Toledo; "Sinusitis," Ralph S. Licklider, Columbus; "Premalignant and Malignant Lesions of the Skin," Eldred Heisel, M.D.; "Hematologic Horizons," Claude S. Wright, M.D., both of Columbus; "Preventive Medicine in Private Practice and in the Community," John D. Porterfield, M.D.; "Management of Urinary Infections," Stephen A. Sheppard, Cleveland; "Office Gynecology," M. J. Schubert, Dayton, and "Acute Low Back Strain," Leonard C. Nagel, Cleveland. Chester D. Swope, Washington, D. C., was scheduled to speak.

Films to be presented were "Peptic Ulcer," "Allergy," "Athletic Injuries," and "Treatment of Laryngitis."

Richard N. MacBain, Chicago; Edwin F. Peters, Ph.D., Des Moines, Iowa, and Morris Thompson, A.B., Kirksville, Mo., spoke at the meeting in Columbus, March 19.

### OKLAHOMA

#### Kay-Osage

Richard C. Rogers, Blackwell, discussed new laboratory technics at the February meeting in Blackwell.

#### Northeast

Guest speaker at the meeting in Pryor February 27, was Richard C. Rogers, Blackwell.

#### Southern

The officers are: President, A. Hugh Cockerell, Wilson; president-elect, Frank D. Stickney, Comanche; vice president, F. Leighton Harmon, Wilson, and secretary-treasurer, Hugh E. Williams (re-elected), Ardmore.

The trustee is John J. Herrin, Madill.

Committee chairmen are: Membership and ethics, Dr. Harmon; hospital and clinics, Dr. Stickney; statistics, Richard G. Noble, Durant; vocational, Roy B. Waddell, Grandfield; public health, George R. Carey, Comanche; industrial, D. H. Moore, Fox; program, public relations, and convention arrangements, Robert H. Safley, Healdton, and legislation, Dr. Williams.

### PENNSYLVANIA

#### State Society

A meeting was held on February 23 in Scranton, when Michael Blackstone, Allentown, gave a talk on venereal disease.

### RHODE ISLAND

#### State Society

At the fifth annual convention March 8 and 9 in Providence, Otterbein Dressler, Philadelphia, Vernon H. Lowell, Portland, Me., and Nelson D. King and H. Earle Beasley, both of Boston, were the speakers.

### TENNESSEE

#### West Tennessee

H. F. Bower, Union City, was elected president at the meeting held in Paris on March 5.

At the same meeting E. H. McKenna, Chicago, spoke on the growing shortage of doctors.

The next meeting was scheduled to be held in Covington.

### TEXAS

#### Tarrant County

A meeting was held February 21 in Fort Worth. Patrick D. Philben, Dallas, discussed nutritional management of children.

#### District One

A quarterly meeting is scheduled for May 21 in Amarillo, following the annual Child Health Clinic. William C. Kelly, Kirksville, Mo., will be the coordinator of the clinic and guest speaker at the meeting.

#### District Four

The officers are: President, John M. Peterson; vice president, Jack Wilhelm; secretary and treasurer, Wiley B. Rountree (re-elected). All are from San Angelo.

The regular meeting was held in San Angelo on February 19, with Phil R. Russell, Fort Worth, the speaker.


# *Gelatine in Diets for Older Patients*

**The tired digestive system, whether or not restricted to an invalid's diet, requires meals that are bland, easily digestible, appetizing and nourishing.**

**For these patients doctors often prescribe frequent dishes made with Knox Unflavored Gelatine. With Knox it is possible to make an endless variety of salads, main dishes and desserts that fulfill all these requirements.**

**Unlike factory-flavored gelatin dessert powders with their high sugar and acid content, Knox is all protein, with no sugar content. Doctors recognize the supplementary protein advantages of Knox Gelatine.**

**FREE**

***...Dietary Guide Books for Special Conditions***

**A series of dietary booklets have been published by Knox, containing food-value charts, menus and recipes for use in conditions requiring special diets. They are available to you free upon request. Knox Gelatine, Box N-12, Johnstown, N. Y.**

*Available at grocery stores in convenient 4-envelope and 32-envelope packages.*

KNOX

Gelatine U.S.P.

ALL PROTEIN · NO SUGAR


#### District Six

The March quarterly meeting was presided over by James J. Choate, Houston.

#### District Seven

The officers are: President, Gordon S. Beckwith, San Antonio; vice president, R. E. Farnsworth, Austin; secretary-treasurer, Billy G. Schoch, San Antonio; and assistant secretary-treasurer, W. H. Van de Grift, Austin.

At the meeting in Austin, February 26, talks were given by Lige C. Edwards and Leland L. Lindblom, both of San Antonio, and by W. E. Gorrell, Kerrville. The next meeting is scheduled for June in San Antonio.

#### District Eight

In addition to the officers listed in the April 1950 issue, Albert O. Scharff, McAllen, has been elected vice president.

#### District Nine

At the February meeting in Victoria, a round table discussion concerning the therapeutic values of favored modalities was the main event.

### UTAH

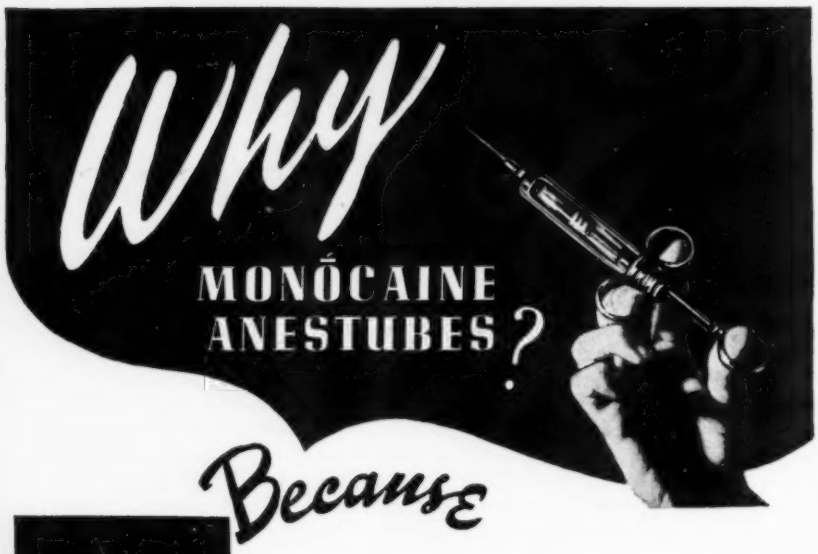
#### State Society

A meeting was scheduled to be held in Springville April 16.

### WEST VIRGINIA

#### State Society

The program for the annual meeting May 7-9 in Parkersburg, according to an advance announcement, was to include



*Procedure is simple. The Anestube (anesthetic tube) is inserted into the frame of the Anestube syringe and pushed forward until the proximal end of the cartridge needle penetrates the metal cap.*

*The Anestube is locked into the frame of the syringe by turning the knurled knob to the right. The Anestube actually becomes the barrel of the syringe. It can't break; it can't leak even under pressure.*

**MONOCAINE ANESTUBES** simplify your local anesthesia administrations. Available in 1 cc., 2¼ cc and 5 cc. sizes to fit the corresponding size Anestube Syringe—they permit direct injection from the container into the tissues. This method assures asepsis and correct dose and represents a convenience not possible with the glass syringe method.

**UNBREAKABLE - LEAKPROOF**—The Anestube Syringe is made of lightweight metal and, unlike the glass type, is unbreakable and leakproof. Because of the many years of service that it will give, the Anestube method represents a decided economy.

**ADAPTABLE**—The Anestube Syringe may be used with all standard needles (Luer adapter supplied with each syringe) and with the special cartridge needles.

**MONOCAINE ANESTUBES** are accepted by the Council on Pharmacy and Chemistry of the American Medical Association

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

*Monocaine, a Brand of Butethamine Formate, is the registered trade mark of the Novocol Chemical Mfg. Co., Inc.*

NOVOCOL CHEMICAL MFG. CO., INC.
2911-23 Atlantic Avenue, Brooklyn 7, N.Y.
Gentlemen: Please send reprints and samples of Monocaine HCl
Dr. .....
Address .....

NOVOCOL CHEMICAL MFG. CO., INC.
2911-23 Atlantic Ave., Brooklyn 7, N. Y.
Toronto • London • Buenos Aires • Rio de Janeiro


"Low-Back Problems," William C. Rankin, Marietta, Ohio; "Eye, Ear, Nose, and Throat," C. M. Mayberry, East Liverpool, Ohio; a round table discussion of osteopathic manipulation; "Diagnosis of Upper Abdominal Pain," J. Donald Sheets, Highland Park, Mich.; "Rheumatic Fever," H. D. Samblanet, Canton, Ohio, and "Urology and Complications," Leo R. Conley, Columbus, Ohio.

### WISCONSIN
#### State Society

Mr. Harve Lamont Smith, Highland Park, has been scheduled to speak on the subject, "Tested Methods of Public Relations," at the annual meeting in Milwaukee, May 3.

#### Fox River Valley

The officers are: President, A. W. Muttart, Neenah; vice president, R. B. Hammond, Appleton, and secretary-treasurer, Guy E. Wiley, Oshkosh.

### CANADA
#### Ontario

The program for the annual meeting in Barrie May 5-6, according to an advance announcement, includes "Recent Advances in Research in the Osteopathic Lesion Process," "Structural Problems in School Children," and "The Relationship Between the Soil and the Health of Man," Wallace M. Pearson, Kirksville, Mo.; "Right-Sided Abdominal Pain," Melvin E. Moyer, Hamilton; "The Low-Back Problem—Clinical Diagnosis," Norman W. Routledge; "The Low-Back Problem—X-Ray Diagnosis," John M. Wilkinson, the latter two of Chatham; "Brachial Neuralgia," Homer B. Curry, Sault Ste. Marie; "The Low-Back Problem—Treatment," Drs. Wilkinson and Routledge, and discussion and technic, Douglas Firth and J. J. O'Connor, Toronto, and E. S. Detwiler, London.

#### Quebec

The officers are: President, A. E. Wilkinson (re-elected); vice president, Bruce E. Marshall, and secretary-treasurer, F. G. Marshall (re-elected).

Committee chairmen are: Legislative, F. G. Marshall, and program, A. A. Eggleston.

All are from Montreal.

#### Saskatchewan

The officers are: President, Anna E. Northup-Little (re-elected), Moose Jaw, and secretary-treasurer, Doris M. Tanner (re-elected), Regina.

Committee chairmen are: Vocational guidance and public relations, Ernest Leonard Jarvis, Saskatoon.

## SPECIAL AND SPECIALTY GROUPS

### ACADEMY OF APPLIED OSTEOPATHY
#### Inland Empire

Norman J. Jacobson, Moscow, Idaho, spoke on "Diagnosis of Intervertebral Disk Trouble"; Griffith H. Parker, Spokane, Wash., on "Urinalysis," and Byron Hunt, Walla Walla, Wash., on "The Rh Factor," at the meeting March 11 in Pullman, Wash.

At the next meeting to be held in Moscow, Idaho, Leanna Terry, Seattle, is to present a paper, "Low Back Pain and Kidney Pathology," and Charles M. Mitchell, Pasco, Wash., "Laboratory Diagnosis and Treatment of Undulant Fever."

#### San Francisco Bay Area

The officers are: President, Edith Salmon, San Francisco; honorary president, Ernest Sisson, and secretary-treasurer, Frank Martin, both of Oakland.

"Diagnosis of the Osteopathic Lesion" was the subject of a discussion by Eugene C. Darnall, Berkeley, and Paul K. Theobald, Oakland, at the meeting in Berkeley March 25.

### LOS ANGELES PROCTOLOGICAL STUDY GROUP

John Orman, Tulsa, Okla., was scheduled to lecture at the March 21 meeting.

### MICHIGAN OSTEOPATHIC SOCIETY OF PROCTOLOGY

The officers are: President, Leroy C. Johnson, Pontiac; vice president, J. Lyman Elliott, Dearborn, and secretary-treasurer, J. Maxwell Jennings, Kalamazoo.

The trustees are: Claude B. Root, Greenville, and E. E. Ludwig, Rochester.

The program chairman is Robert T. Lustig, Grand Rapids.

### NEW JERSEY X-RAY SOCIETY

J. Armande Porias, Newark, talked about "What the General Practitioner

Should Know About Roentgen Therapy," and Ralph W. Davis, Jr., Audubon, discussed "Low-Back Pathologies and Their Treatment" at the meeting March 5 in Trenton.

**PENNSYLVANIA OSTEOPATHIC RADIOLOGY SOCIETY**

The officers are: President, Paul T. Lloyd, Philadelphia; vice president, A. E. Kegerreis, Lancaster, and secretary-treasurer, W. L. Tanenbaum.

The board of trustees includes the officers and Kenneth L. Wheeler and Frederick E. Mowry, Philadelphia, and Paul B. Miller, Allentown.

## State and National Boards

**ALABAMA**

Examinations June 27-29. Address D. G. Gill, M.D., secretary, Board of Medical Examiners, 519 Dexter Avenue, Montgomery 4.

**ALASKA**

Anyone desiring to take basic science examinations should address the secretary of the Basic Science Board of Examiners, C. Earl Albracht, M.D., Box 1931, Juneau.

**ARIZONA**

Basic science examinations June 20 in Tucson. Applications must be filed 2 weeks prior to examination date. Address Francis A. Roy, Ph.D., secretary, Basic Science Board, University of Arizona, Tucson.

**ARKANSAS**

Basic science examinations in May. Address L. E. Gebauer, M.D., secretary, Basic Science Board, 701 Main Street, Little Rock.

**COLORADO**

Professional examinations June 19-21. Applications must be filed in person on or before June 3. Address George H. Gillen, M.D., secretary, Board of Medical Examiners, 831 Republic Building, Denver 2.

Basic Science examinations May 31, June 1. Applications must be filed on or before May 17. Address Esther B. Starks, D.O., secretary, Basic Science Board, 1459 Ogden St., Denver 3.

**CONNECTICUT**

Professional examinations July 11. Address H. Wesley Gorham, D.O., secretary, Osteopathic Examining Board, 520 West Avenue, Norwalk.

Basic science examinations June 10. Applications must be filed 2 weeks before examination. Address Miss M. G. Reynolds, Executive Assistant, Board of Healing Arts, 110 Whitney Ave., New Haven 10.

**DELAWARE**

Examinations July 11-13. Address Joseph McDaniel, M.D., secretary, Board of Medical Examiners, 229 S. State Street, Dover.

**FLORIDA**

Professional examinations June 24 and 25 in St. Petersburg. Address Richard S. Berry, D.O., secretary, Board of Osteopathic Medical Examiners, P. O. Box 124, Station "A," St. Petersburg.

J. A. Camara, Jacksonville, and C. E. Dove, West Palm Beach, have been appointed to the Board.

Basic science examinations June 3 in Gainesville. Applications must be filed by May 2. Address M. W. Emmel, D.V.M., secretary, Board of Examiners in the Basic Sciences, University of Florida, Gainesville.

**GEORGIA**

Examinations July 4, in Atlanta. Address R. E. Andrews, D.O., secretary, Board of Osteopathic Examiners, 304 First National Bank Building, Atlanta.

Frederick W. Daniels, Fitzgerald, has been reappointed to the Board.

**HAWAII**

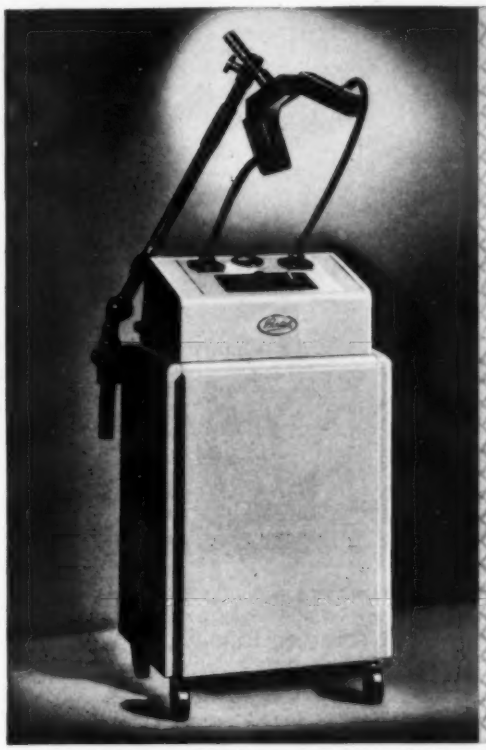
Examinations July 12. Address Mabel A. Runyan, D.O., secretary, Board of Osteopathic Examiners, 2333 C. Kalakaua Avenue, Honolulu 30.

**IDAHO**

Examinations June 8 in Boise. Applications must be filed 15 days prior to examination. Address D. W. Hughes, D.O., secretary, Board of Osteopathic Examiners, 203 Noble Bldg., Boise.

**ILLINOIS**

Examinations June 13-15 in Chicago. Applications must be filed 15 days prior



THIS ALL-PURPOSE DIATHERMY IS ECONOMICAL

The MF-49, adaptable to all recognized diathermy technics, is illustrated here with the contour applicator. Air-spaced electrodes, induction cable, and electrodes for cuff technic can also be used. A smooth current is provided for minor electrosurgery.

Accepted by the A.M.A. Council on Physical Medicine and Rehabilitation, the Federal Communications Commission and the Underwriters Laboratories. Price of Unit with contour applicator as illustrated $567.50 F.O.B. Factory.

The Burdick MF-49
UNIVERSAL DIATHERMY

Let us send you literature, including prices. Just jot down "MF-49" on your card or letterhead, and mail to —

Burdick
THE BURDICK CORPORATION
MILTON, WISCONSIN

A CHEMICAL FORMULA IS NOT ENOUGH

YEARS OF CLINICAL EXPERIENCE MUST EVER REMAIN THE FINAL TEST OF THERAPEUTIC AGENTS

SINCE 1912

$I + CH_3 \cdot (CH_2)_7 \cdot CH : CH \cdot (CH_2)_7 \cdot COOH + C_nH_{2n+2} =$ IODEX

**IODEX** (plain)
for MINOR BURNS, WOUNDS AND ABRASIONS, ENLARGED GLANDS, BOILS, ABSCESSES AND MANY SKIN DISORDERS.

**IODEX** c Methyl Sal
for STRAINS, SPRAINS, MUSCLE AND RHEUMATIC PAINS. ALSO HELPS RELIEVE THE ITCHING IN SKIN DISEASES.

**IODEX** stimulates cell proliferation . . . promotes normal granulation . . . helps to restore the normal degree of skin acidity which counteracts infection.

**IODEX*** is an organic combination of iodine which by percutaneous absorption slowly gives up its iodine content.

*IODEX cum Methyl Sal *(same formula with Methyl Salicylate added for its analgesic effect).*

Samples and literature on request

MENLEY & JAMES, LTD., 10 WEST FORTIETH STREET, NEW YORK 18 N.Y.

to examination. Address Charles F. Kervin, Superintendent of Registration, Department of Registration and Education, State House, Springfield.

**INDIANA**

Examinations June 14-16, in Indianapolis. Address Paul R. Tindall, M.D., secretary, Board of Medical Registration and Examination, 20 N. Pike St., Shelbyville.

**IOWA**

Basic science examinations August 8 in Des Moines. Address Ben H. Peterson, Ph.D., Coe College, Cedar Rapids.

**KANSAS**

Examinations June 15-17 at Topeka. Applications must be filed 30 days before the examination. Address Forrest H. Kendall, D.O., secretary, Board of Osteopathic Examination and Registration, 420½ Penn, Holton.

The officers of the Board are: President, C. A. Welker, Concordia; executive secretary, Forrest H. Kendall, Holton. Both were re-elected. The members are: Dewey B. Wallace, Belleville, S. Riley King, Neodesha, and A. H. Thiemann, Sublette.

**KENTUCKY**

Examinations June 14-16 in Louisville. Applications must be filed 10 days prior to examination. Address Miss Ray Wunderlich, Director, Medical Licensure & Registration, State Board of Health, 620 S. Third St., Louisville 2.

**MAINE**

Examinations June 13, State House, Augusta. Address George Frederick Noel, D.O., secretary, Board of Osteopathic Examination and Registration, Monument Square, Dover-Foxcroft.

Albert E. Chittenden, Auburn, is chairman of the Board; George Frederick Noel, Dover-Foxcroft, is secretary-treasurer. The members are: Lloyd W. Morey, Millinocket, A. Franklin Randolph, Waldoboro, and Harry H. Campbell, Portland.

**MARYLAND**

Examinations in June in Baltimore. Applications must be filed by May 31. Address Walter H. Waugaman, D.O., secretary, Board of Osteopathic Examiners, 33 S. Centre St., Cumberland.

**MASSACHUSETTS**

Examinations July 11. Address George Schadt, M.D., secretary, Board of Registration in Medicine, State House, Boston 33.

**MICHIGAN**

Professional examinations June 27-29. Address Harry F. Schaffer, D.O., secretary, Board of Osteopathic Registration and Examination, 1375 Penobscot Building, Detroit 26.

**MINNESOTA**

Basic science examinations June 6, 7, in Minneapolis. Applications must be filed 1 week before examination. Address Raymond Bieter, M.D., secretary, Board of Examiners in the Basic Sciences, 126 Millard Hall, University of Minnesota, Minneapolis 14.

**MISSISSIPPI**

Professional examinations June 20-21 in Jackson, at the R. E. Lee Hotel. Address R. N. Whitfield, M.D., assistant secretary, Board of Health, Jackson 113.

**MISSOURI**

Examinations May 29-31 at Kirksville College of Osteopathy and Surgery and at Kansas City College of Osteopathy and Surgery. Address F. C. Hopkins, D.O., secretary, Board of Osteopathic Examination and Registration, 203 S. Sixth St., Hannibal.

**NEVADA**

Examinations July 11. Address Walter J. Walker, D.O., secretary, Board of Osteopathic Examiners, 210 W. Second St., Reno.

**NEW JERSEY**

Examinations June 20. Application must be filed 20 days prior to examination. Address E. S. Hallinger, M.D., secretary, Board of Medical Examiners, 28 W. State Street, Trenton.

**NEW MEXICO**

Basic science examinations August 6. Address Miss Marguerite Kilkenny, Assistant Secretary of State, c/o Office of Secretary of State, Santa Fe.

**NEW YORK**

Examinations June 27-30, Albany, Buffalo, New York, and Syracuse. Applications must be filed 15 days prior to examination. Address Jacob L. Lochner, Jr., M.D., secretary, Board of Medical Examiners, State Department of Education, 23 S. Pearl Street, Albany 7.

**NORTH CAROLINA**

Examinations in Raleigh July 7-8. Applications must be received by June 20. Address Frank R. Heine, D.O., secretary, 926 Southeastern Building, Greensboro.

**NORTH DAKOTA**

Examinations July 4. Address M. M. Kemble, D.O., secretary, Board of Osteopathic Examiners, 6-10 Kresge Block, Minot.

**OHIO**

Examinations June 14-17 in Columbus. Applications must be filed 10 days prior to examination. Address H. M. Platter, M.D., secretary, Medical Board, 21 W. Broad St., Columbus 15.

**OKLAHOMA**

Examinations June 15 at the Skirvin Hotel, Oklahoma City. Applications must be filed 15 days before examination. Address Kendall H. Rogers, D.O., secretary, Board of Osteopathic Examiners, 804 First National Bank Bldg., Oklahoma City.

**OREGON**

Professional examinations in July. The Board of Medical Examiners will meet April 28, 29 to interview applicants for licensure. Address Mr. Howard I. Bobbitt, executive secretary, 608 Failing Bldg., Portland.

Basic science examinations June 17. Address Charles D. Byrne, Ph.D., secretary, Board of Higher Education, Eugene.

**RHODE ISLAND**

Professional examinations July 6. Basic science examinations in August. Address Mr. Thomas B. Casey, Administrator of Professional Regulations, 366 State Office Building, Providence.

**SOUTH CAROLINA**

Examinations June 20 at Columbia. Applications must be filed 15 days prior to examination. Address E. W. Pratt, D.O., Board of Osteopathic Examiners, 6 Glebe St., Charleston 6.

**SOUTH DAKOTA**

Basic science examinations the first week in June. Address Gregg M. Evans, Ph.D., secretary, Basic Science Board, Yankton College, Yankton.

**TENNESSEE**

Professional examinations in July in Nashville. Address M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland Avenue, Jackson.

Basic science examinations July 7, 8 in Memphis. Address O. W. Hyman, M.D., secretary, Board of Basic Science Examiners, 874 Union Avenue, Memphis.

**TEXAS**

Professional examinations June 19-21 in Austin. Address M. H. Crabb, M.D., secretary, Board of Medical Examiners, 1714 Medical Arts Building, Fort Worth 2.

**VERMONT**

Examinations June 21, 22 in the office of Howard I. Slocum, D.O., Room 34, Battell Block, Middlebury. Application must be filed by June 1. Address Charles D. Beale, D.O., secretary, Board of Osteopathic Examination and Registration, Mead Bldg., Rutland.

**VIRGINIA**

Examinations June 23, 24, Richmond Hotel, Richmond. Applications must be filed 10 days prior to examination. Address K. D. Graves, M.D., secretary, Board of Medical Examiners, 631 First St., S. W., Roanoke.

**WASHINGTON**

Professional examinations in July. Address Mr. George C. Starlund, acting director, Department of Licenses, Olympia.

Basic science examinations in July in Seattle. Applications should be filed 30 days prior to examination, but will be accepted up to 15 days before examination. Address Mr. Edward C. Dohm, Department of Licenses, Olympia.

**WEST VIRGINIA**

Examinations June 21, 22 at the Daniel Boone Hotel, Charleston. Applications must be filed 10 days prior to the examination. Address T. H. Lacey, D.O., secretary, Board of Osteopathy, 711½ Market Street, Parkersburg.

**WISCONSIN**

Professional examinations June 27 at Milwaukee. Address C. A. Dawson, M.D., secretary, Board of Medical Examiners, River Falls.

Basic science examinations June 3, The Plankinton House, Milwaukee. Applications must be filed by May 27. Address Prof. W. H. Barber, secretary, Board of Examiners in the Basic Sciences, 621 Ransom Avenue, Ripon.

**WYOMING**

Examinations June 5, 6 in Cheyenne. Address G. M. Anderson, M.D., secretary, Board of Medical Examiners, State Capitol, Cheyenne.

**MANITOBA**

The officers of the Board of Osteopathic Physicians are: President, F. H. Deeks; vice president, R. M. Cornelius; secretary and registrar, W. Kurth; treasurer, G. G. Murphy. L. B. Mason is a member. All are of Winnipeg.

Dr. Deeks has been reappointed for a term expiring in 1953.

Accumulating evidence[1,2] is more firmly establishing the ability of inositol to reduce abnormally high blood cholesterol levels. This lipotropic agent activity has been demonstrated not only in patients with liver disease, but also in the presence of diabetes mellitus.[3]

Since hypercholesterolemia is regarded as a forerunner of atherosclerosis which in turn leads to local or generalized arteriosclerosis, inositol constitutes a sound weapon for the prevention or active treatment of degenerative arterial disease. Although the lipotropic activity of inositol is evident in the absence of all other therapy, the use of a high protein, low fat diet and the administration of other B complex vitamins is also advisable.

Inositol-C.S.C., supplied in 0.5 Gm. capsulettes, is indicated whenever lipotropic action of this substance is required. Average dose, 1.0 Gm. three times daily.

(1.) Felch, W. C.: New York Med. *5*:16 (Oct. 20) 1949. (2.) Leinwand, I., and Moore, D. H.: Am. Heart J. *38*:467 (Sept.) 1940. (3.) Felch, W. C., and Dotti, L. B.: Proc. Soc. Exper. Biol. & Med. *72*:376 (Nov.) 1949.

*C.S.C. Pharmaceuticals*

A DIVISION OF COMMERCIAL SOLVENTS CORPORATION, 17 EAST 42ND STREET, NEW YORK 17, N. Y.

**for home treatment—a new, simple, physical method for administration of intrapelvic heat**

**Reich-Nechtow* Intrapelvic Hydrothermy Apparatus**

**Indicated in cases of salpingo-oophoritis, salpingitis, parametritis, chronic pelvic peritonitis, hypoplastic uterus, adnexal inflammatory masses and pre- and post-operatively in inflammatory pelvic diseases.**

**The apparatus is designed for use both in the doctor's office and for home treatment by the patient. It consists of a latex bag for insertion in the vagina, with an inflow tube with funnel end for attachment to a water faucet and an outlet tube.**

**Intrapelvic heat produced by the flow of warm water through the apparatus induces muscle relaxation, decreased arterial tension, increased circulation and dilatation of peripheral vessels with subsequent decongestion of deeper vessels. The increased circulation produces a local increase in phagocytic leucocytes, increased cellular metabolism and absorption of exudates.**

* ***W. J. Reich, M.D., F.A.C.S., and M. J. Nechtow, M.D.: American Journal of Obstetrics and Gynecology, Sept. 1948. (Mod. Med., May 15, 1949.)***

**D-50 Reich-Nechtow Intrapelvic Hydrothermy Apparatus, 4½′ long; individually boxed .....each $10.00**

***Order from your Surgical Supply Dealer***

**CLAY-ADAMS COMPANY, INC.**
**141 EAST 25th STREET · NEW YORK 10**
**Showrooms also at 308 West Washington Street, CHICAGO 6, ILL.**

### REREGISTRATION OF OSTEOPATHIC LICENSES

Before June 30—Delaware, $10.00. Address Joseph McDaniel, M.D., secretary, Board of Medical Examiners, 220 S. State Street, Dover.

June 30—Virginia, $1.00. Address K. D. Graves, M.D., secretary, Board of Medical Examiners, 631 First Street, S. W., Roanoke.

July 1—Idaho, $2.00. Address Estella S. Mulliner, director, Bureau of Occupational License, Dept. Law Enforcement, Boise.

July 1—within period of 60 days following—Indiana, $5.00 for residents; $10.00 for non-residents. Address Paul R. Tindall, M.D., secretary, Board of Medical Registration and Examination, 20 N. Pike St., Shelbyville.

July 1—Kansas, $5.00. Address Forrest H. Kendall, D.O., secretary, Board of Osteopathic Examination and Registration, 420½ Pennsylvania, Holton.

July 1—Michigan, $5.00. Address Harry F. Schaffer, D.O., secretary, Board of Osteopathic Registration and Examination, 1375 Penobscot Bldg., Detroit 26.

July 1—North Dakota, $3.00. Address M. M. Kemble, D.O., secretary, Board of Osteopathic Examiners, 6-10 Kresge Block, Minot.

July 1—Oklahoma, $2.00. Address Kendall E. Rogers, D.O., secretary, Board of Osteopathy, 804 First National Bank Bldg., Oklahoma City, 2.

July 1—Tennessee, $5.00 to the State Licensing Board for the Healing Arts, and $1.00 to the Osteopathic Board. Both fees are payable to M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland Ave., Jackson.

### EXAMINATIONS BY NATIONAL BOARD

The National Board of Examiners for Osteopathic Physicians and Surgeons conducts Parts I and II of its examination on the first Thursday and Friday of each May and December at the six approved colleges. Application blanks may be obtained from the secretary, and the completed application blank, together with a passport photograph and check for the part or parts to be taken, must be in the Secretary's office by the November 15, or April 15 preceding examination. Part III of the examination will be given in specific locations at the discretion of the Board for the convenience of the applicant.

Examinations in Part I consist of anatomy, physiology, pathology, chemistry, and bacteriology. Part II consists of examination in mental diseases, surgery, obstetrics and gynecology, pediatrics, public health, osteopathic theory and practice. Part II is an oral examination.

Address Paul van B. Allen, D.O., acting secretary, 1500 N. Delaware Street, Indianapolis 2, Indiana.

### WHEN A BABY DIES UNEXPECTEDLY*

*Katherine Bain, M.D.*
Acting Director, Division of Research, Children's Bureau

Each year in the United States a large number of babies under 1 year of age die of what is classified as "accidental mechanical suffocation." The story behind the death is usually this: An infant, in apparent good health and usually between the ages of 2 and 5 months, is put to bed in a crib or baby buggy, or in bed with his parents. Several hours later the infant is found dead. Sometimes he is lying on his face; sometimes bedclothes are over his head. Often in the excitement of the discovery the exact conditions are unnoted. The physician, the coroner, or the medical examiner, confronted with such a death, is likely to assume that the baby has smothered. And without an autopsy, or at best after a sketchy one, he writes on the birth certificate that the baby's death was due to "accidental mechanical suffocation." This story, appearing in the daily press, is a familiar one.

*Reprinted from *The Child*, March, 1950.

### WAS THE BABY NEGLECTED?

But the story does not end here. The mother and father of a baby who has died in this way develop a great sense of guilt, which may disturb their lives for years. Sometimes accusations of one parent about the carelessness of the other lead to quarrels and a breakup of the home. Occasionally local authorities, or friends or neighbors, may imply intentional neglect, or even homicide. The social and emotional repercussions of such an "accident" are therefore widespread and of great importance.

Taken at its face value, the situation would appear to call for a campaign to educate the public on methods of preventing these "accidents." In fact, that is exactly what happens. Great pressure is brought to bear on public authorities by parents and by physicians to publicize this condition and to suggest ways of preventing it. If these deaths were really due to "accidental mechanical suffocation," as the records state, such a campaign might lead to a solution of the whole problem.

But there is now abundant evidence that most of these deaths are not due to any external cause but may be the result of a sudden overwhelming infection with which a young baby is not able to cope. When a careful post-mortem examination is made, including microscopic study, evidence of infection is often found in the baby's respiratory tract, though sometimes elsewhere in his body, as in the membranes of the brain.

When a careful history is taken, information is often brought out concerning respiratory infection in the family, and there may be some indication that the baby himself had not been up to par.

About 15 years ago Dr. Sidney Farber of Boston reported two cases of infant deaths said to be caused by suffocation, both of which were discovered later to have been caused by streptococcus infection. Each of these babies was found dead in bed, and each was diagnosed by the medical examiner as having died from suffocation. In each of these cases the fire department had been called upon to try to resuscitate the "suffocated" baby. Both babies happened to be under the care of the same pediatrician, and in each case he requested that a post-mortem examination be given. The post-mortems showed that the diagnosis of suffocation was incorrect.

### UNEXPECTED DEATHS OF BABIES STUDIED

Others have reported similar experiences. The largest series of cases studied intensively have been those reported by Drs. Jacob Werne and Irene Garrow in New York City and Dr. W. H. Davison in Birmingham, England.

Drs. Werne and Garrow have reported upon 167 such cases. These include every baby under 1 year of age that died unexpectedly in New York City's Borough of Queens during a 15-year period. In not one case did their investigation show accidental mechanical suffocation of a healthy baby by bedclothes or other such means.

Each of the 167 infants had been in apparent good health and had been found dead in crib, carriage, or bed. All these deaths were of the kind that are ordinarily considered due to suffocation.

For about one-quarter of the deaths (43) the cause was established through autopsy without microscopic examination. Mastoiditis and otitis media accounted for most of these deaths (20). Among the other causes were bronchopneumonia, congenital heart disease, and meningitis.

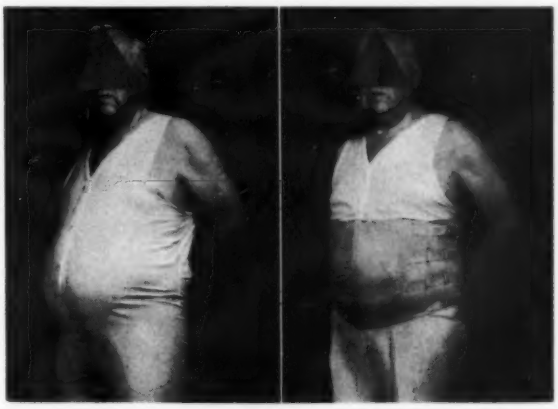
### MICROSCOPE SHOWS ABNORMAL CONDITIONS

In all the cases that were given complete microscopic examination (118) abnormal conditions were found, usually an acute inflammation of the respiratory tract but sometimes of some other organ.

An important point made by Drs. Werne and Garrow was that these lesions were not found in the tissues of 31 infants who had died of proved violence, about half of them from intentional smothering.

Furthermore, Drs. Werne and Garrow investigated the deaths of 67 babies who died, unexpectedly, in view of other persons, so that there could be no possible allegation of smothering. In these babies acute respiratory disease was found to be the usual cause of death, just as with the others who had been thought to be smothered.

With such evidence, it is clear why these doctors consider inaccurate all certifications of death by accidental mechanical suffocation unless an autopsy has been done. "Furthermore," they say, "we may consider as unsatisfactory all

**"Chronic Cardiac Disease rarely develops in the presence of good body mechanics"***

Goldthwait, et al,* found that even when the disease had developed, the correction of faulty mechanics helped greatly "in reducing the peripheral load, in lessening cardiac strain, and in increasing the patient's usefulness."

We invite the physician's investigation of Spencer Individual Designing as adjunct to corrective treatment of body mechanics. A Spencer automatically induces better posture, thereby favorably influencing postural habits.

Each Spencer is *designed, cut, and made* for each patient—based on a description of the patient's body and posture and detailed measurements. That is why a Spencer is therapeutically more effective.

MAIL coupon at right — or PHONE a dealer in Spencer Supports (see "Spencer corsetiere," "Spencer Support Shop" or Classified Section) for information.

* Goldthwait, J. E., Brown, L. Y., Swaim, L. T., and Kuhns, J. G., *Body Mechanics in Health and Disease*, 103-105, J. B. Lippincott Co., Philadelphia, 1937.

SPENCER, INCORPORATED
129 Derby Ave., New Haven 7, Conn.
*Canada:* Spencer, Ltd., Rock Island, Que.
*England:* Spencer, Ltd., Banbury, Oxon.

Send free Spencer Booklet for Physicians to:

Name ..... D.O.

Address .....

.....

5-50

individually designed SPENCER SUPPORTS®

Sporicidal Too!
BARD-PARKER
FORMALDEHYDE GERMICIDE
Recognized authorities on surgical sterilization state emphatically that no disinfecting medium should be used in the operating room that is not capable of killing spores.
Compare this significant data evaluating the potency of the IMPROVED germicide
Sporulating Bacteria | 50% Dried Blood | Without Blood
Cl. tetani | 3 hours | 3 hours
Cl. welchii | 2 hours | 2 hours
B. anthracis | 1½ hours | 1½ hours
Vegetative Bacteria
Staph. aureus | 5 min. | 15 sec.
E. coli | 3 min. | 15 sec.
Strept. hemolyticus | 2 min. | 15 sec.
A new brochure evaluating the comparative properties of B-P Germicide will be mailed on request.
Within a reasonably short period, practical for hospital purposes, this potent Solution destroys pathogenic vegetative bacteria, spore-formers and their spores.
True surgical disinfection is further accomplished without danger of rust or corrosive damage to sharp edged and other delicate surgical instruments, thus leaving their efficiency and life expectancy unimpaired.
In meeting ALL THREE exacting requirements of potency, practicability and protection, B-P Germicide provides a desirable margin of safety for instrument disinfection.
Ask your dealer
PARKER, WHITE & HEYL, INC.
Danbury, Connecticut
A BARD-PARKER PRODUCT

autopsies in which there was failure to examine the brain, the mastoids, the middle ears, and the neck organs, in addition to the routine dissection of the thoracic and abdominal viscera. We may also disregard all cases that have not had a complete microscopic examination." (The report by Drs. Werne and Garrow may be found in the American Journal of Public Health, June 1947. Incidentally, they now have a new total of 200 cases.)

Dr. W. H. Davison, who is the coroner for Birmingham, England, reported (British Medical Journal, August 25, 1945) that in his area the number of deaths attributed to smothering dropped noticeably after such deaths began to be investigated regularly by pathologists. Such investigations began after a law had been passed, in 1926, giving coroners greater authority in ordering post-mortem examinations.

During the years 1938 to 1944, 318 deaths were reported to Dr. Davison as possibly due to suffocation. Post-mortem examination, however, showed that only 38 of these deaths actually were due to this cause. The remaining 280 deaths were definitely ascribed to natural causes, principally bronchopneumonia.

Unfortunately, in this country, these cases often do not come to autopsy. The physician who is called, or the coroner or medical examiner, is content with superficial examination. If he feels reasonably sure there is no evidence of foul play, he accepts the story of how the child was found, and at most does a gross autopsy. Since most of the cases show nothing on gross examination, the case is assigned incorrectly to "accidental mechanical suffocation."

The problem is no small one. In 1947 in the United States the number of deaths attributed to this cause was 1,663, or almost half of all accidental deaths under 1 year of age. In addition, there were 929 deaths of babies under 1 year that were attributed to diseases of the thymus, and many of these were probably from the same cause as the deaths attributed to "accidental mechanical suffocation." In the large group of deaths described as due to "ill-defined and unknown causes" (4,065) there may also be some of these same cases.

In spite of the evidence presented by Farber, Werne and Garrow, Davison, and others, physicians continue to make this incorrect diagnosis, coroners continue to accept it without a request for complete autopsy, and the public continues to press for action.

If the situation is to be improved, more data must be secured, based on careful examination of these cases by a variety of means, to determine the cause of death, and these data must bear the stamp of approval of an authoritative group. Then physicians, coroners' offices, and the lay public will accept the results of an investigation which has the backing of a group and is not the work of one investigator.

And what is the Children's Bureau's interest in this? The Children's Bureau has a very broad mandate from Congress—to investigate and report on all matters pertaining to the welfare of children. Specifically mentioned is the important problem of infant mortality. The question of babies' deaths attributed to smothering is a public-health problem of some magnitude. The deaths of a comparatively large number of infants are wrongly diagnosed.

### ACCURATE RECORDS ESSENTIAL

From the standpoint of advance of medical knowledge, the Children's Bureau is concerned with this error. It is concerned also in the correctness of vital statistics. Birth and death certificates are necessary tools used in improving the community's health, and it is essential that the basic data on these records be correct. As part of its interest in the social and emotional life of families and children, the Children's Bureau is concerned about the effect on parents of the feeling of guilt surrounding a baby's death that has been attributed to suffocation. And finally, the Children's Bureau is concerned to know how best to handle the pressure from the public, and sometimes from physicians, for propaganda based on the false premise that a baby is more likely to smother if he is sleeping on his stomach.

Recently the Children's Bureau, with the Public Health Service, both of the Federal Security Agency, called together a group of specialists—pediatricians, pathologists, and others—to consider the problem. This group proposed that what we know now be emphasized and highlighted for informing the professional groups concerned, as well as the lay public. But further, they said, we all need to know more. On the recommendation of this group there is under consideration the formation of a Commission for the Study of Unexpected Death During Infancy. Such a group might coordinate a series of studies set up in a number of cities, designed to investigate thoroughly all cases that would now be routinely classified as "accidental mechanical suffocation." Such a commission, after it had accumulated sufficient data on unexpected deaths, might issue a report, which because of the thoroughness of the study and the competence of the commission would be acceptable to the medical profession, to coroners and medical examiners, and to the public.

### PASSANO FOUNDATION AWARD

For the second time in its history the directors of the Passano Foundation announce a dual award, the $5000 cash award for 1950 going to Edward C. Kendall, M.D., and Philip S. Hench, M.D., both of the Mayo Clinic, Rochester, Minnesota. The award will be conferred jointly upon Drs. Kendall and Hench for the chemical investigation of the adrenal cortical hormones, the development of Cortisone and its clinical application to the rheumatic diseases.

The Passano Foundation, established in 1943 by The Williams & Wilkins Company, Medical Publishers, Baltimore, to aid in the advancement of medical research, especially that which bears promise of clinical application, has made five previous awards. These have gone to E. J. Cohn, Harvard University, for his work on fractionation of blood; Ernest Goodpasture, Vanderbilt University, for virus culture by chick embryo method; Selman Waksman, of Rutgers University, for discovery of streptomycin; a joint award to Helen B. Taussig and Alfred Blalock, both of Johns Hopkins University Medical School, for their development of the "blue baby" operation; and in 1949 to Oswald T. Avery, formerly of the Rockefeller Institute for Medical Research, for his investigations of the pneumococci and their immunological relationships.

facts about Felsol

1. Over 30 million Felsol Powders are dispensed yearly.
2. Felsol is well known and prescribed by physicians in nearly every civilized country . . .
3. More than 10 thousand physicians in the U. S. report gratifying results with Felsol in their practices.

. . . Impressive evidence that FELSOL is no experiment today, but a well proven medication for symptomatic treatment in asthma, hay fever, and bronchitis.

. . . Evidence that you too can prescribe FELSOL for these conditions with confidence.

AMERICAN FELSOL COMPANY, LORAIN, OHIO

Kindly send professional sample of FELSOL

Name_____

Street_____

City-State_____

PLEASE PRINT PLAINLY

### MEASURING NURSING RESOURCES

A guide for making surveys of nursing entitled "Measuring Nursing Resources" has been produced recently by the Division of Medical and Hospital Resources of the Public Health Service, Federal Security Agency.

This publication will be useful to regions, states or communities in making survey of their own nursing situation. It outlines a technic for (1) measuring existing nursing personnel and educational resources (2) estimating needs at specified future dates in terms of expanding health programs and (3) for evaluating the present nurse education program in the area to meet future needs.

Copies are available on written request to: The Public Health Service, Federal Security Agency, Washington 25, D. C., Attention: Division of Medical and Hospital Resources.

FOR MAKING WET DRESSINGS "BUROW'S SOLUTION N.F."

PRESTO-BORO POWDER IN ENVELOPES OR IN TABLETS

"PRINCIPAL INGREDIENT OF BASIC ALUMINUM ACETATE"

For wet dressings with astringent and antiphlogistic properties in the symptomatic treatment of inflammations, sprains, insect bites. For rapid healing by their antipruritic, decongestive action. Accurate dosage. Antiseptic. Stable.

ACCEPTED BY U. S. ARMY & NAVY

STANDARD PHARMACEUTICAL CO., INC., 1123 Broadway, New York

Manufacturers of NUCARPON ® Compound Charcoal Tablets for Intestinal Dysfunction

VALERIANETS-DISPERT For BETTER Sedation

Vitamin $B_{12}$, other nam
series of clinical investigations presents an interest-
study. These eleven children were given Vitamin $B_{12}$
orally. Under treatment they showed: "...increased
physical vigor, alertness, better general behavior, but
above all, a definite increase in appetite..."
Spies and others have noted that Vitamin $B_{12}$ helps
fight fatigue, a role that is marked in several members
of the B-complex. Indications are that one of the most
important values of this new B vitamin will be in the
treatment of the "fatigue syndrome," loss of appetite,
and weakness.
In these roles, other members of the B-complex will,
also, be important just as they are in the hemapoietic
process.
A balanced combination of Vitamin $B_{12}$, Vitamin $B_1$,
Niacin and Iron, in combination with properly prepared
Stomach and Duodenum substance, provides a scientific
formulation designed to increase the effectiveness of Vita-
min $B_{12}$ in all of its roles.
1 Science 110, 651 (1949)
dps 111
specify dartell
Three tablets daily provide:
Vitamin $B_{12}$ 6 micrograms
Vitamin $B_1$ 1 milligram
Niacin 3 milligrams
Iron 30 milligrams
With Dicalcium Phosphate, and specially processed Stomach and Duodenum substances.
DARTELL LABORATORIES,
1226 S. Flower Street
Los Angeles 15, California

## Books Received

PROCEEDINGS OF THE FIRST CLINICAL ACTH CONFERENCE. John R. Mote, M.D., Editor. Cloth. Pp. 607, with illustrations. Price $5.50. The Blakiston Company, 1012 Walnut Street, Philadelphia 5, 1950.

PENICILLIN. Under the General Editorship of Professor Sir Alexander Fleming, M.B., B.S., F.R.C.P., F.R.C.S., F.R.S., Professor Emeritus of Bacteriology, University of London; Principal, Wright-Fleming Institute of Microbiology, St. Mary's Hospital Medical School, London. Ed. 2. Cloth. Pp. 492, with illustrations. Price $7.00. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1950.

THE DIAGNOSIS AND TREATMENT OF CARDIO VASCULAR DISEASE. Edited by William D. Stroud, M.D., F.A.C.P., Professor of Cardiology, University of Pennsylvania Graduate School of Medicine; Past President of the American Heart Association; Treasurer and Member of Board of Regents of the American College of Physicians; Licentiate of the National Board of Medical Examiners and the American Board of Internal Medicine; Consulting Cardiologist to the Pennsylvania, Graduate, Bryn Mawr, Abington Memorial, and Children's Heart Hospitals. Vols. I and II. Ed. 4. Cloth. Pp. 2,084, with illustrations. Price $25.00 per set. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1950.

MEDICAL GYNECOLOGY. By James C. Janney, M.D., F.A.C.S., Associate Professor of Gynecology, Boston University School of Medicine; Associate Visiting Gynecologist, Massachusetts Memorial Hospital. New, Ed. 2. Cloth. Pp. 454, with illustrations. Price $6.50. W. B. Saunders Company, West Washington Square, Philadelphia 5, 1950.

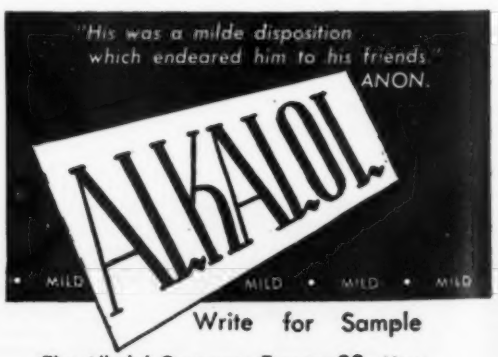
A PRIMER OF VENOUS PRESSURE. By George E. Burch, M.D., Henderson Professor of Medicine, Tulane University School of Medicine; Senior Visiting Physician, Charity Hospital; Consultant in Cardiovascular Diseases, Ochsner Clinic; Visiting Physician, Touro Infirmary, New Orleans. Cloth. Pp. 174, with illustrations. Price $4.00. Lea & Febiger, Washington Square, Philadelphia 6, 1950.

VARICOSE VEINS. By R. Rowden Foote, London. Cloth. Pp. 226, with illustrations. Price $8.00. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1949.

HISTOLOGY. By Arthur Worth Ham, M.B., Professor of Anatomy, in Charge of Histology, in the Faculties of Medicine and Dentistry, University of Toronto, Toronto, Canada. Cloth. Pp. 756, with illustrations. Price $10.00. J. B. Lippincott Company, East Washington Square, Philadelphia, 1950.

CARDIOGRAPHY. By William Evans, M.D., D.Sc., F.R.C.P., Physician to the Cardiac Department of the London Hospital;

THE NEUROPSYCHIATRIC FOUNDATION, INC.
Offers one and two year
FELLOWSHIPS IN PSYCHIATRY IN THE MEYERS CLINIC, LOS ANGELES
Training is available in the range of ambulant psychiatry emphasizing diagnosis and psychotherapy in coordination with the psychologist and psychiatric social worker.
STIPEND $2,400 PER YEAR
*Graduates of approved colleges of Osteopathy are eligible.*
*APPLY TO THE DIRECTOR*
THE MEYERS CLINIC
800 SOUTH BERENDO ST. LOS ANGELES 5, CALIF.


"His was a milde disposition
which endeared him to his friends."
ANON.
ALKALOL
MILD • MILD • MILD • MILD
Write for Sample
The Alkalol Company, Taunton 23, Mass.

Physician to Out-Patients of the National Heart Hospital; Consulting Cardiologist to the Royal Navy. Cloth. Pp. 140, with illustrations. Price $6.75. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1948.

A MANUAL OF CARDIOLOGY. By Thomas J. Dry, M.A., M.B., Ch.B., M.S. in Medicine. Associate Professor of Medicine, University of Minnesota (Mayo Foundation); Consultant in Section on Cardiology, Mayo Clinic. Ed. 2. Cloth, Pp. 355, with illustrations. W. B. Saunders Company, West Washington Square, Philadelphia, 1950.

EXHIBITIONISM. By N. K. Rickles, B.S., M.D., Fellow of the American Psychiatric Association, Diplomat of the American Board of Psychiatry and Neurology, Senior Consultant at the Veterans Administration Center, Los Angeles, Consultant in Psychiatry to the Office of the Surgeon General, Medical Department, United States Army, and Director of the Psychiatric Center of Seattle. Cloth. Pp. 198. Price $5.00. J. B. Lippincott Company, East Washington Square, Philadelphia, 1950.

DELBRIDGE COMBINED SOCIAL SECURITY AND WITHHOLDING TAX CHART. By Charles L. Delbridge. Cloth. Pp. 34. Price $7.50. Delbridge Calculating Systems, Inc., 2502-10 Sutton Ave., St. Louis 17, 1949.

PHYSICIANS' AND NURSES' CONCISE MEDICAL ENCYCLOPAEDIA. By William H. Kupper, M.D., Author of "Malarial Therapy of Paresis"; "State and National Board Summary"; "Interesting and Useful Medical Statistics." Cloth. Pp. 450, with illustrations. Price $7.50. Biblion Press, 257 South Spring Street, Los Angeles 12, 1950.

## CHANGE OF ADDRESS AND NEW LOCATIONS

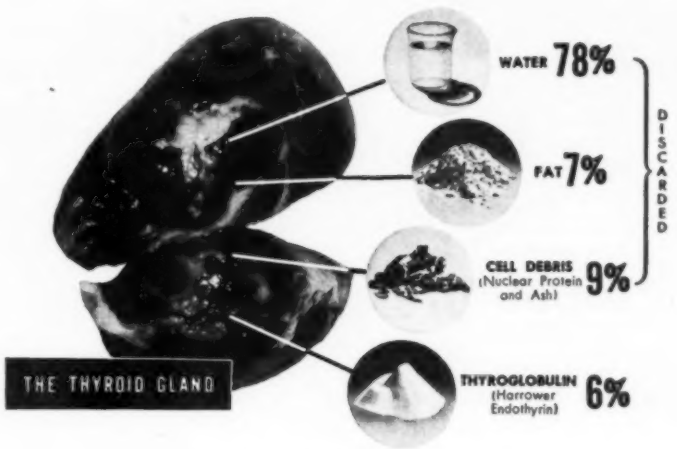
Armstrong, Blanche R., from Los Angeles, Calif., to 206 Milford St., Glendale 3, Calif.
Armstrong, Herbert W., from Los Angeles, Calif., to 206 Milford St., Glendale 3, Calif.
Baker, Ross B., from Milwaukee, Wis., to 102 Main St., East Troy, Wis.
Beach, Elizabeth Dodds, from 216 Vallejo Drive, to 1517 E. Mountain St., Glendale 6, Calif.
Beach, Raymond L., COPS '49; 1517 E. Mountain St., Glendale 6, Calif.
Beckmeyer, H. E., from Carbondale, Ill., to Sheridan Community Hospital, Sheridan, Mich.
Bethune, Richard H., from Flint, Mich., to Saginaw Osteopathic Hospital, 515 N. Michigan Ave., Saginaw, Mich.
Bittiker, Virgil A., from Moberly, Mo., to Box 794, Callao, Mo.
Borman, Richard H., from Oneonta, N. Y., to Forest Hill Clinic & Hospital, 13240 Euclid Ave., East Cleveland 12, Ohio
Brose, Lillian, from 933 Linden St., to 1343 Easton Ave., Bethlehem, Pa.
Catanese, Joseph, PCO '49; 5135 Chancellor St., Philadelphia 39, Pa.
Chase, Rodney H., from 933 Linden St., to 1343 Easton Ave., Bethlehem, Pa.
Cloos, Cora Ivy, COPS '49; 1314A E. Harvard St., Glendale 5, Calif.
Colpitts, R. Scott, from Fair Haven, Mich., to Lexington, Mich.
Comstock, Jack D., CCO '49; 201 Highland Ave., Detroit 3, Mich.
Crespi, P. Leo, from 10 Congress Square, to 48 Deering St., Portland 4, Maine
Dillon, James A., from Box 29, to 953 Maple Ave., Noblesville, Ind.
Dodge, John W., KCOS '50; 110½ Broadway, Fargo, N. Dak.
Durden, W. V., from 4417 Fannin St. to 705 Richmond Ave., Houston 6, Texas
Elsea, Lyle Earl, KC '50; Corpus Christi Osteopathic Hospital, 1202 Third St., Corpus Christi, Texas
Evans, G. Irving, from 12 Pearson Ave., to Ferensway House, Prospect St., Hull, England
Ferguson, Travis W., from 3803 N. Fourth St., to Widney Clinic, 1020 W. Central Ave., Albuquerque, N. Mex.
Giddings, Helen M., from 10320 Ashbury Ave., to 670 Lakeview Road, Cleveland 6, Ohio
Giesler, Jacob W., from Kirksville, Mo., to 5255 Thekla Ave., St. Louis 15, Mo.
Gribble, W. S., Jr., from 4417 Fannin St., to 4411 Montrose Blvd., Houston 6, Texas
Grilli, Alfred A., from Philadelphia, Pa., to Phillips Bldg., N. Chester St., New Cumberland, W. Va.
Hamilton, Gordon L., from Bismarck, N. Dak., to 6-10 Kresge Bldg., Minot, N. Dak.
Haymes, Carl O., KC '50; 2202½ Lexington Ave., Kansas City 1, Mo.
Haynie, Edgar A., KC '50; 215 E. Linwood Blvd., Kansas City 2, Mo.
Herbold, William C., from New Buffalo, Mich., to 589 Starkweather Ave., Plymouth, Mich.


# When Thyroid Therapy is Needed

# Endothyrin®

HARROWER

is uniform in metabolic activity and well tolerated by the patient due to the purity of the concentrated thyroglobulin.

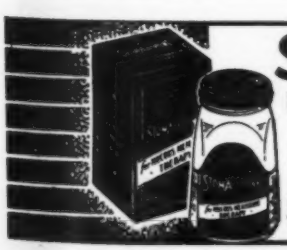



Standardized chemically and biologically, Endothyrin is available in full dosage range: 1½, 1, ½, and ¼ gr.* tablets.

Only the active principles of the thyroid gland (Diiodotyrosin and Thyroxin Iodine) are used in Endothyrin. Inorganic substances, cell debris, and fat are discarded to avoid unwanted side reactions.

*U.S.P. Thyroid Equivalent

The HARROWER Laboratory, Inc.
930 Newark Ave.
Jersey City 6, N. J.



# STOMASEPTINE VAGINAL DOUCHE POWDER

In leukorrhea . . . trichomonas vaginalis . . . vaginitis

Dosage: Two tablespoonfuls dissolved in two quarts of comfortably hot water. Dispensed: 2, 6, 14 and 32 oz. jars.

Clinical trial supply sent on request.

STOMASEPTINE CORP., 150 WEST 28th STREET, NEW YORK 1, N.Y.

THE LEADER SINCE 1907

# for quick, accurate blood pressure readings

YES, for 43 years, *Tycos* Aneroid* has meant the ultimate in quick, accurate blood pressure readings. 43 years of scientific experience and know-how are packed into *your* Tycos Aneroid. Many Tycos Aneroids have given over a quarter-century of dependable service and are still going strong. Here are 8 good reasons why your next sphyg should be a Tycos Aneroid:

1. **ACCURATE** in any position!
2. **YOU KNOW** it's accurate as long as the pointer returns within zero!
3. **POINTER OSCILLATES** with each pulse beat, revealing any pulse irregularities!
4. **SAVES PRECIOUS TIME!** Zip open pocket case, circle Hook Cuff once around arm; and your Tycos Aneroid is on!
5. **16 DIFFERENT** adjustments on Hook Cuff to fit any size adult arm!
6. **CAN'T BALLOON** out at edges, throwing your readings out of whack!
7. **MANOMETER CLIPS** permanently on cuff, always ready for instant use! Minimizes accidental dropping.
8. **TEN YEAR** triple guarantee! That means we'll readjust your Tycos Aneroid free of charge even if you drop it! ("Readjust" does not include cost of broken parts.)

On display at your surgical supply dealer's. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

*Registered Trade-Mark

ONLY $36.50 Complete with exclusive Hook Cuff, and zipper carrying case to slip easily into your pocket.

# Tycos Aneroid

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

Herman, Grant W., from Stratton, Colo., to 1401 Kipling St., Lakewood 15, Colo.
Jones, Everett W., from 108 East St., to 207 Third Ave., Warren, Pa.
Jones, Sam P., KC '50; 1505 W. College Terrace, Independence, Mo.
Kerr, Harry N., from Miami, Fla., to 19 Ponce de Leon Blvd., Coral Gables 34, Fla.
Kosley, Milton, CCO '49; 1424 Young St., Owosso, Mich.
Lacey, Burr, from Rusk, Texas, to 2105 Independence Ave., Kansas City 1, Mo.
Lash, S. Ralph, from 3065 E. Ocean Blvd., to 16 18th Place, Long Beach 3, Calif.
Lease, Charles H., KC '49; La Cygne, Kans.
Lepoff, Irvin, from 721 S. Fourth St., to 1275 Robbins St., Philadelphia 11, Pa.
Logue, Francis M., CCO '49; Doctors Hospital, Inc., 325 W. Jefferson Blvd., Los Angeles 7, Calif.
Luly, Lucian L., KC '50; 437 S. Jackson St., Kansas City 1, Mo.
Lyons, Earl K., KC '50; Box 773, Elkins, W. Va.
Mack, Wilmoth J., from Radcliffe, Iowa, to Hubbard, Iowa
Makita, Victor K., CCO '49; 4075 Tweedy Blvd., South Gate, Calif.
McCanne, J. Art, COPS '49; Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles 33, Calif.
McCarty, William C., CCO '49; 5519 S. Kenwood Ave., Chicago 37, Ill.
Meador, A. P., from Natl. Bank of Summers Bldg., to 419 Second Ave., Hilton, W. Va.
Meyers, S. Philip, from 5224 N. Figueroa St., to Pan American Medical Center, 424 S. Broadway, Los Angeles 13, Calif.
Mihalevich, Richard A., from Kirksville, Mo., to Box 184, Shelbina, Mo.
Neff, Dorothy, from 716 East End Ave., to 246 W. Orange St., Lancaster, Pa., (change of name from Dorothy Neff Dannin)
Ocheltree, Lloyd A., COPS '49; Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles 33, Calif.
Ohman, Robert G., KC '50; 1310 S. University Blvd., Denver 10, Colo.
Oliphant, Duncan, from Kirksville, Mo., to 1750 Getty St., Muskegon, Mich.
Olson, Wilmer R., COPS '49; 316 Gladys Ave., Long Beach 4, Calif.
Pfautz, Harry V., KC '49; Saginaw Osteopathic Hospital, 515 N. Michigan Ave., Saginaw, Mich.
Pimentel, A. L., from 14 Centre St., to 73 N. State St., Concord, N. H.
Plansoen, Cornelius, from 6629 N. E. Sandy Blvd., to 6604 N. E. Alameda, Portland 13, Ore.
Reid, Richard W., from Willard, Mo., to Humansville, Mo.
Relich, Victor, from Kirksville, Mo., to 2146 Stuart St., Berkeley 5, Calif.
Rice, Owen A., from Grand Rapids, Mich., to 2726 Angus, Los Angeles 39, Calif.
Robone, Lawrence J., COPS '49; 6111 Simpson Ave., North Hollywood, Calif.
Rosen, Samuel, from Lincoln, Nebr., to 18160 Woodward Ave., Detroit 3, Mich.
Schurr, Kenneth E., from Alva, Okla., to Waynoka, Okla.
Schwab, Kenneth I., from 9518 35th Ave., N. E., to 815 Shafer Bldg., Seattle 1, Wash.
Sizemore, P. D., COPS '49; 2719½ Baldwin St., Los Angeles 31, Calif.
Slick, Roy McGregor, KC '50; Rocky Mountain Osteopathic Hospital, 2221 Downing St., Denver 5, Colo.
Smith, Leslie B., DMS '49; Alto, Texas
Stilwell, Harold B., from Route 11, Box 567-P, to Route 11, Box 744, Fort Worth, Texas
Taylor, John C., KC '50; 1010 E. 27th St., Kansas City 8, Mo.
Tellez, Fernando A., COPS '49; 2110 Workman St., Los Angeles 31, Calif.
Thompson, F. J., from Seattle, Wash., to 1721 Griffin Ave., Los Angeles 31, Calif.
Thurman, W. Leon, from Chickasha, Okla., to Linneus, Mo.
Tomlinson, Billie L., KC '50; 541 Brooklyn Ave., Kansas City 1, Mo.
Trimmer, Paul W., KCOS '50; 13316 N. Norfolk, Detroit 21, Mich.
Verrengia, Mario, from Redondo Beach, Calif., to 158 E. 66th St., Los Angeles 3, Calif.
Widney, George C., from 3803 N. Fourth St., to Widney Clinic, 1020 W. Central Ave., Albuquerque, N. Mex.
Widney, George C., Jr., from 3803 N. Fourth St., to Widney Clinic, 1020 W. Central Ave., Albuquerque, N. Mex.
Widney, Roderick K., from 3803 N. Fourth St., to Widney Clinic, 1020 W. Central Ave., Albuquerque, N. Mex.
Williams, James E., from Tulsa, Okla., to 129 Main St., Oilton, Okla.
Williams, Wallace S., KC '50; Blackwood Clinic & Hospital, Comanche, Texas
Wilson, Edwin, from 6409 V St., to 6528 V St., Little Rock, Ark.
Woodson, Thomas E., KC '50; 1214 E. 34th St., Kansas City 3, Mo.

# CLASSIFIED ADS

RATES PER INSERTION: $2.00 for 20 words or less. Additional words 10 cents each. 25c for box number.

TERMS: Cash with order, please.

COPY: Must be received by 1st of preceding month.

ADDRESS all box numbers c/o THE JOURNAL, 212 E. Ohio St., Chicago 11, Illinois.

BUSINESS AND APPOINTMENT CARDS: 1000 $3.00 postpaid. De Luxe thinlucent quality stock beautifully embossed. Send for samples. Louis L. Norton, 184 13th St., Oakland 12, Calif.

FOR SALE: Practice and equipment in suburb of large Ohio industrial city with hospital facilities. Will stay to introduce. Dr. David H. Gateman, North Jackson, Ohio.

ROENTGENOLOGIST: D.O. finishing three years approved A.O.A. residence on Roentgenology in October, 1950, desires association with hospital or group practice. Box 552, THE JOURNAL.

FOR SALE: Spinalator, $200.00. Write Dr. Frank D. Stanton, 419 Boyleston St., Boston 16, Mass.

WANTED: Certified Roentgenologist with Surgical background—200 M.A., rotating anode, motor driven tilt. Fine opening for right man. Write Dr. H. C. Friend, 1910 Brady, Davenport, Iowa.

FOR SALE: Five-room modern office with full equipment in Illinois city of 85,000. Excellent practice for two. Will introduce. Box 556, THE JOURNAL.

WANTED: Eye, Ear, Nose and Throat physician. Optical experience mandatory. Excellent opportunity for right man. Competition negligible. Dr. G. L. Bilyea, c/o Mineral Spring Hospital, Louisiana, Missouri.

FOR SALE: A few used Spinalators that we have taken in on newer models—thoroughly reconditioned and guaranteed. They are real bargains. The Spinalator Company, P.O. Box 826, Asheville, N. C.

WANTED: Young man as associate in general practice in New Jersey. Long established office. No investment required. Box 557, THE JOURNAL.

WANTED: A surgical assistant. A full time 3-year assistant—preceptor training program in general surgery is immediately available under a certified surgeon. For details write Emmett Binkert, D.O., F.A.C.O.S., c/o Carson City Hospital, Carson City, Michigan.

FOR SALE: $20,000 to $25,000 proctology and general practice. Ohio. Hospital facilities. Box 558, THE JOURNAL.

## IMPORTANT NOTICE

Make your plans now to attend the

**Fifty-fourth Annual Convention**

of the

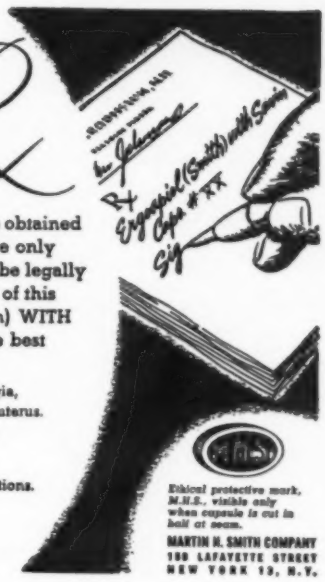
**American Osteopathic Association**

Hotel Stevens Chicago

July 10-14, 1950

Please order hotel accommodations as early as possible.


*Only on your Rx*




When prescribing Ergoapiol (Smith) with Savin for your gynecologic patients, you have the assurance that it can be obtained only on a written prescription, since this is the only manner in which this ethical preparation can be legally dispensed by the pharmacist. The dispensing of this **uterine tonic,** time-tested ERGOAPIOL (Smith) WITH SAVIN—only on your prescription—serves the best interests of physician and patient.

**INDICATIONS:** Amenorrhea, Dysmenorrhea, Menorrhagia, Metrorrhagia, and to aid involution of the postpartum uterus.

**GENERAL DOSAGE:** One to two capsules, three to four times daily—as indications warrant.

In ethical packages of 20 capsules each, bearing no directions.

*Literature Available to Physicians Only.*

ERGOAPIOL (SMITH) WITH SAVIN

Ethical protective mark, M.H.S., visible only when capsule is cut in half at seam.

MARTIN H. SMITH COMPANY
180 LAFAYETTE STREET
NEW YORK 13, N.Y.

*Teckla* WHITE

GOWNS for your OFFICE PATIENTS . .

★ No. 2G KRINKLE CLOTH for home laundering. (Do not iron)

★ No. 3G PLAIN CLOTH for public laundries. 6 for $13.00; 12 for $24.00; 3 doz. @ $23.00 per doz.

(Same prices for 2G and 3G)

BACKS OPEN 12 inches, 24" or full length (48")

Actual BUST MEASURE of garments: Size 1 (Small) 42 inches; Size 2 (Medium) 82 inches; Size 3 (Large) 40 inches.

TECKLA GARMENT CO., Mfrs.
26 Southbridge Street
Worcester 1, Mass.

Extra TIES: 50 yards for $1.00

★

*Write for price lists on TECKLA's high grade*

DOCTORS' Office COATS and NURSES' *made-to-measure* UNIFORMS

TECKLA pays postage on all CASH orders

TECKLA GARMENT CO., 26 Southbridge St., Worcester 1, Mass.

Gentlemen: Please send us the following quantities of TECKLA PATIENTS' OFFICE GOWNS:

No. 2G: Size 1.....; Size 2.....; Size 3.....

No. 3G: Size 1.....; Size 2.....; Size 3.....

(Backs open; 12 inches.....; 24".....; or full length of 48".

EXTRA TIES: .....yards Send C.O.D..... or Postpaid.....

NAME.....

Address.....

.....

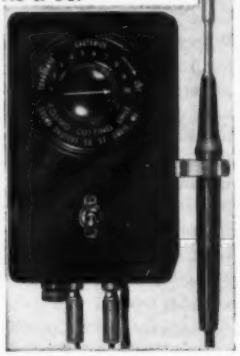
**CALIFORNIA**

THOMAS J. MEYERS
Ph.D., D.O., F.A.C.N.
AND
Anthony DiNolfo, D.O.
Psychiatry
234 East Colorado Street
Pasadena 1, Calif.

Cecil D. Underwood, D.O.
Practice limited to
DERMATOLOGY
and
SYPHILOLOGY
416 West 8th Street
Los Angeles, California

LEE R. BORG
D.O., F.A.O.C.Pr.
Certified by the A.O.B.P.
Proctology
1130 West Santa Barbara Avenue
Los Angeles, California
AXminster 7149

MERRILL
SANITARIUM
(Neuropsychiatric)
Established 1923
EDWARD S. MERRILL
A.B., D.O., F.A.C.N., Sc.D.(Hon)
Certified Neuropsychiatrist
Director
4600 Centinela Ave.
Venice, Calif.
Los Angeles Phone
TExas 0-5227

**COSMO CUTTING UNIT**
WITH
**POWER CONTROL**
Just what the doctor ordered; cutting, cauterization and coagulation in one compact easy to operate unit. Used on 110 AC or DC.
a most versatile unit affording easier technics in many surgical procedures
WRITE FOR DETAILS

Cosmo Cautery Co. 4215 Virginia Ave. St. Louis 11, Mo.

GRADUATES OF
KANSAS CITY COLLEGE OF
OSTEOPATHY AND SURGERY

March 10, 1950

Bronsky, Maurice Louis
Edwards, Edward B. M.
Elsea, Lyle Earl
Ferguson, Howard Matthew
Gagnon, Gabriel J.
Haymes, Carl Orville
Haynie, Edgar A.
Jones, Sam Price
Krause, Justin Gardner
Lambert, Charles Franklin
Loken, Arnold B., Jr.
Luly, Lucian Leslie
Lyons, Earl Kenneth
Marcom, Gordon Albert
Mason, Donald Fulton
Mellies, Charles Murray
Mennen, Paul
Ohman, Robert Grant
Rogers, Ned Clements
Rowane, William Anthony
Slick, Roy McGregor
Smith, Calvin Bayless
Smith, Crews Z.
Taylor, John Clyde, Jr.
Tomlinson, Billie Lorraine
Williams, Wallace Standard
Woodson, Thomas Edward
Young, Donald Claude
Zirul, Elias Emanuel

**COLORADO**

Philip A. Witt, D.O.
Urology and Surgery
1550 Lincoln Denver

**DISTRICT OF COLUMBIA**

Chester D. Swope, D.O.
Osteopathic Physician
The Farragut Apts.
Washington, D. C.

**MISSOURI**

HAROLD COE, D.O.
F.A.O.C.Pr.,
Proctologist
501 Pine St.
St. Louis 1, Mo.

ANTHONY E. SCARDINO, D.O.
Practice Limited to
Dermatology &
Syphilology
929 Bryant Building
Kansas City, Mo.

For Anti-Flatulent Effects in Intestinal Putrefaction and Fermentation
**NUCARPON®**
Each tablet contains: Extract of Rhubarb, Senna, Precipitated Sulfur, Peppermint Oil and Fennel Oil, in a high activated willow charcoal base.
Action and uses: Mild laxative, adsorbent and carminative. For use in indigestion, hyperacidity, bloating and flatulence.
1 or 2 tablets daily ½ hour after meals. Bottles of 100.
STANDARD PHARMACEUTICAL CO., INC. 1123 Broadway, New York

**BET-U-LOL**
HUXLEY PHARMACEUTICALS
521 FIFTH AVENUE, NEW YORK, N. Y.
The Ethical Topical Anodyne that Controls . . . PAIN *in muscle, nerve and joint inflammations*
CONTAINS CHLORAL HYDRATE • MENTHOL METHYL SALICYLATE

NEW MEXICO

J. Paul Reynolds, D.O.
Roswell Osteopathic Clinic and Hospital
401 N. Lea
Roswell, N. Mex.

NEW YORK

Thomas R. Thorburn, D.O.
HOTEL BUCKINGHAM
101 W. 57th Street
New York City

OHIO

EAST SIDE HOSPITAL
TOLEDO, 5 OHIO
Member A. O. H. A.
Registered by A.O.A.
OPEN STAFF
M. N. Greenhouse D.O. Chief of Staff
Bernard Abel D.O. Administrator

PENNSYLVANIA

DAVID SHUMAN, D.O.
Hypermobile Joints
1728 Pine St.
Philadelphia, Pa.

Quality is the prime factor in the *KRUSE "75" . . . plus utility and service.

The three handy exterior sliding compartments, six interior adjustable bottle loops and utility pocket permit a systematic arrangement of instruments and accessories. Sturdy construction, steel frame, attractive design, black genuine pigskin, chromium plated expansion lock and hardware, and comfortable carrying handles . . . this is the KRUSE "75". Over all size 16" long, 8" wide, and 10" high. "Sold at Surgical Supply Dealers"
*Reg. U. S. Pat. Off.

G. KRUSE & CO.
800 McCarter Hwy., Newark 4, N. J.

RHODE ISLAND

F. C. TRUE, D.O.
SURGEON
1141 Narragansett Blvd.
CRANSTON 5, R. I.
CHIEF SURGEON
Osteopathic General Hospital of R.I.

TEXAS

Private Instructions
in
Proctology & Hernia
Drs. Norwood & Norwood
Mineral Wells, Texas

CASE HISTORY BLANKS

Please specify whether Standard or Official.

☐ Standard — Size 8½ x 11. Ruled paper, punched for binder.

☐ Official — Size 8½ x 11 — Folded to fit box file.

Price $2.00 per 100, postpaid

A.O.A., 212 E. Ohio St.
Chicago 11, Ill.

## APPLICATIONS FOR MEMBERSHIP

CALIFORNIA

Lewis, Ruth A., (Renewal) Box 351, Brawley
Armstrong, Blanche R., (Renewal) 206 Milford St., Glendale 3
Armstrong, Herbert W., (Renewal) 206 Milford St., Glendale 3
Nye, Clarence L., (Renewal) 611 S. Westmoreland Ave., Los Angeles 5
Clay, Horace Sawyer, (Renewal) 2034 N. Los Robles Ave., Pasadena 6

IOWA

Storey, B. A., (Renewal) Nevada

MASSACHUSETTS

Bunting, Arthur H., (Renewal) 23 Broad St., Lynn

MISSOURI

Westwood, A. H., (Renewal) Laughlin Hospital & Clinic, 711 W. Jefferson St., Kirksville
Haskell, Robert F., (Renewal) Box 120, Weaubleau

OHIO

Zahner, C. Frank, (Renewal) Ottoville

PENNSYLVANIA

Maulfair, Conrad G., 29 S. Ninth St., Allentown
Leonard, Harry M., (Renewal) 1336 N. Second St., Harrisburg
Landgrebe, William H., (Renewal) 53 Long Lane, Upper Darby

Just Good Products
WHOLESALE PROFESSIONAL PRICES
Ethical Specialties Company
REMINGTON BUILDING
KALAMAZOO 11, MICHIGAN

VITAMINS—MINERALS
AMINO ACIDS
NUTRITIONAL SPECIALTIES
Liver-Iron—Antacids—MASSIVE DOSAGE TOCOPHEROLS
RAW DESICCATED DUODENUM for Peptic Ulcer Management
And Many Other Items
Ask for Samples - Data

**NEO-CULTOL** encourages the restoration of normal colonic function *without harsh cathartic action* . . . establishes a more favorable intestinal flora . . . counteracts inimical putrefactive bacteria.

Administration of NEO-CULTOL implants a potent culture of viable *L. acidophilus* in refined mineral oil jelly, achieving the desired results without griping, flatulence, or diarrheic movements.

**NEO-CULTOL®**

L. ACIDOPHILUS IN REFINED MINERAL OIL JELLY, CHOCOLATE FLAVORED

Arlington

- PLEASANTLY CHOCOLATE FLAVORED
- ADJUSTED MELTING POINT PREVENTS LEAKAGE
- NON-HABIT FORMING

SUPPLIED: Jars containing 6 oz.

THE ARLINGTON CHEMICAL COMPANY
YONKERS 1, NEW YORK

# Osteopathic Magazine

## *Order Blank*

### WITHOUT IMPRINT

| Delivered to Your Office | Annual Contract | Single Order |
|---|---|---|
| Under 200 copies | 8½c each | 9c each |
| 200 or more | 7½c each | 8c each |
| **Mailed Direct to List** | | |
| Under 200 copies | 10¼c each | 10¾c each |
| 200 or more | 9¼c each | 9¾c each |

### IMPRINTED

Add $1.00 per 100 (Minimum Charge) to following prices to cover cost of imprinting:

| Delivered to Your Office | Annual Contract | Single Order |
|---|---|---|
| *50 to 200 copies | 8½c each | 9c each |
| 200 or more | 7½c each | 8c each |
| **Mailed Direct to List** | | |
| *50 to 200 copies | 11¼c each | 11¾c each |
| 200 or more | 10¼c each | 10¾c each |

(Postage regulations call for 1c additional postage on imprinted O.M.'s. This is included in above prices.)

*We do not accept imprinted orders for less than 50 Magazines.

### IMPRINT PLATE CHARGES

Original plate set-up on contract orders—free.
Original plate set-up on single orders—$1.00.
(No charge if plate is on file.)
Changes in set-up, $1.00 each time, whether contract or single orders.

American Osteopathic Association
212 E. Ohio St., Chicago 11, Ill. Date.....

Please send.....copies of OSTEOPATHIC MAGAZINE

.....issue.

Check service wanted—

☐ Contract (Start with above issue) ☐ Single order
☐ With professional card ☐ Deliver in bulk
☐ Without professional card ☐ Mail to list

2% for cash on orders of 500 or more. Mailing envelopes free. Shipping charges prepaid in United States and Canada.

Name..... City.....

Address.....State.....

Attach Copy for professional card to this order blank

# Advertisers Index


Alkalol Co. ..... 52
American Felsol Co. ..... 47
American Osteopathic Association ..... 22, 24, 26, 28, 30, 54, 56
American Sterilizer Co. ..... 27
Arlington Chemical Co. ..... 54

Bard-Parker Co., Inc. ..... 46
Barnes, A. C., Company, Inc. ..... 33
Baum, W. A. Co. ..... 19
Borcherdt Malt Extract Co. ..... 16
The Borden Co. ..... 15
Bristol, Myers Co. ..... Cover III
Burdick Corp. ..... 41

Camp, S. H. and Company ..... 8
Cereal Institute ..... 6
Cereal Lactic Co. ..... 21
Ciba Pharmaceutical Products, Inc. ..... 5
Classified Ads ..... 51
Clay, Adams Co. ..... 44
Colwell Publishing Co. ..... 26
Commercial Sovlents Corp. ..... 34, 43
Cosmo-Cautery Co. ..... 52

Dartell Laboratories ..... 48

Eaton Laboratories ..... Cover II
Endo Products, Inc. ..... 36
Esscolloid Co. ..... 55
Ethical Specialties Co. ..... 53

Fischer, H. G., & Co. ..... 10

Harrower Laboratories ..... 49
Huxley Pharmaceuticals, Inc. ..... 52

Johnson & Johnson ..... 1

Knox Gelatine Co. ..... 39
Kruse, G., & Co. ..... 53

Larson Laboratories ..... 26
Lavoris Chemical Co. ..... 16
Lea & Febiger ..... 14

McIntosh Electrical Corp. ..... 29
McLintock, Duncan C., Co., Inc. ..... 13
Macmillan Company ..... 14
Menley & James, Ltd. ..... 42
Meyers Clinic ..... 48
Morris & Co., Philip ..... 17
Morton Pharmaceuticals ..... 29

Nestlé Co. ..... 18
Novocol Chemical Co. ..... 40

Ortho Pharmaceutical ..... Insert

Pelton & Crane Co. ..... 37
Pet Milk Co. ..... 11
Professional Cards ..... 52, 53
Professional Foods ..... 20
Professional Prtg. Co. ..... 20

Ritter Co., Inc. ..... 38
Roerig, J. B. & Co. ..... 32

Sandoz Pharmaceuticals ..... 7
Saunders, W. B. Company ..... Cover I
Schering Corp. ..... 9
Shield Laboratories ..... 23
Smith, Martin H., Co. ..... 51
Special Milk Prod., Inc. ..... 4
Spencer, Inc. ..... 45
Standard Pharmaceutical Co., Inc. ..... 47, 52
Stom Aseptine Corp. ..... 49
Stuart Co. ..... Insert

Tampax, Inc. ..... 12
Taylor Instrument Companies ..... 50
Teckla Garment Co. ..... 51
Tyree Chemist, Inc., J. S. ..... 18

U. S. Vitamin Corp. ..... 35

Varick Pharmacal Co. ..... 3
Vitaminerals, Inc. ..... 31

Wander Company ..... 25
William Warner Co. ..... Cover IV

Young, F. E., & Co., Inc. ..... 26



Esscolloid®
SUPPLEMENT

**Preconditions the patient to respond to treatment**

*Why Doctors Prefer It*

**A natural bulk laxative fortified with vitamins and minerals.**

**Gentle and effective.**

**Corrects and prevents stubborn constipation.**

**Restores depleted tissues. Helps build resistance.**

**Vitamin content when packed 150% average daily needs.**

**Plus natural Vitamin B complex. Rich in Biotin, Choline, Folic acid and other B complex vitamins.**

**Plus the trace elements: Cobalt, Copper, Manganese and Zinc in colloidal form.**

**Safe and dependable.**

**Contains no laxative drugs.**

**Send for Introductory Offer**

THE ESSCOLLOID CO., INC.
1620 Harmon Place
Minneapolis 3, Minn.

NAME.....

ADDRESS.....

CITY.....

STATE.....

# . . . Professional Progress

## Made Osteopathic Magazine a Necessity

**How** could it be otherwise? As the profession progressed, people began to ask questions about osteopathy. And people everywhere are still asking questions today.

**Who** can answer these questions better than the profession itself?

**What** better means can the profession use to tell the osteopathic story than OSTEOPATHIC MAGAZINE designed for that very purpose?

**Why** not take advantage of this ethical way to tell the public about yourself and your work?

- **In the June Issue:**
- *"Where Are You Today"—the family doctor questions.*
- *"Maine Challenges Diabetes"—with a concrete program.*
- *"Watch Your Waistline"—to preserve your health.*

You can send OSTEOPATHIC MAGAZINE to your patients for as little as 8½ cents for each copy if you have a yearly contract. For a slight additional cost—only $1.00 per 100 copies—you can have your name imprinted on each copy. With a minimum amount of cost you create a maximum of good will. *(See coupon on page 54.)*

**AMERICAN OSTEOPATHIC ASSOCIATION**
**212 E. Ohio St., Chicago 11, Ill.**

D.A.
1950

55

"MINIT" NOTE
Minit-Rub provides prompt relief for aching muscles in a matter of minutes. A dab on the fingers, a minute or two of brisk massage and soothing comfort is speeded to affected areas. For neuralgia, myalgia, rheumatic afflictions— wherever an effective counter-irritant is indicated.

STAINLESS • GREASELESS • VANISHING

# MINIT-RUB

THE MODERN RUB-IN

PRODUCT OF BRISTOL-MYERS
19 WEST 50 STREET, NEW YORK 20, N. Y.

# Look to the Tongue

The tongue may prove to be a good indicator, when vitamin B-complex deficiencies are suspected. When the vitamin B-complex factors are at a low level, let the *taste* of the new, natural orange-flavored OMNI-BETA* IMPROVED provide an added incentive for accepting and raising the vitamin B intake.

*The pleasant taste of* **Omni-Beta*** *Improved*

masks its rich, full bodied complement of all of the vitamin B-complex factors with the secondary anti-anemia fraction derived from whole liver. Young and old readily accept and frequently even request larger doses of OMNI-BETA* IMPROVED.

**One teaspoonful of Omni-Beta* Improved contains:**

Vitamin $B_1$ (thiamine hydrochloride) 2.0 mg. (2xM.D.R.†)
Vitamin $B_2$ (riboflavin) 2.0 mg. (M.D.R.†)
Niacinamide 10.0 mg.**
Pantothenic Acid 2.0 mg.‡
Vitamin $B_6$ (pyridoxine hydrochloride) 0.2 mg.‡
Choline 20.0 mg.‡
Inositol 10.0 mg.‡
Secondary fraction derived from 10 grams fresh liver

*†Minimum Daily Requirement*
***Minimum Daily Requirement not established*
*‡Need in human nutrition not yet established*

OMNI-BETA* IMPROVED is available in bottles of 8 and 16 fl. oz. and 1 gal.

**William R. Warner & Co., Inc.**
New York St. Louis

**T. M. Reg. U. S. Pat. Off.*